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FATHER BOOK READING BEHAVIORS AND
PRE-KINDERGARTEN EMERGENT
LITERACY

by

Cherri H. Brooks

A thesis submitted in partial fulfillment
of the requirements for the degree

of

MASTER OF SCIENCE

in

Family, Consumer, and Human Development

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ABSTRACT

Father Book Reading Behaviors and Pre-Kindergarten
Emergent Literacy

by

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Utah State University, 2005

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Department: Family, Consumer, and Human Development

Conventional literacy is important for academic and life success. Emergent literacy is a precursor to conventional literacy, and parent-child book reading experiences can foster emergent literacy development. Fathers are important figures in children's development and may make important contributions to their emergent literacy development.

This study observed 179 fathers from families who participated in research evaluating the Bear River Early Head Start program. Father-child book reading was videotaped as part of a 10-minute observation session in each child's home at 14 months, 24 months, 36 months, and pre-kindergarten (age 4 or 5). Book reading observation sessions were coded based on parental strategies (i.e. language and behaviors) used during book reading. Pre-kindergarten observation sessions were transcribed for a measure of children's oral language. Children were tested in their homes at pre-kindergarten with measures of phonological processing, receptive vocabulary, and

concepts of print. Regression analyses investigated the individual impact of book reading strategies on outcomes and the impact of strategies over time (cumulative). Findings revealed certain individual strategies had more impact than cumulative strategies, which was contrary to the hypotheses. The most positive cumulative impact was time spent during book reading. Overall, receptive vocabulary was the emergent literacy domain most strongly predicted by father book reading strategies, and cumulative time spent book reading was the strategy that predicted emergent literacy outcomes most consistently.

(104 pages)

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Cherri H. Brooks

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CHAPTER I

INTRODUCTION

Statement of the Problem

In the United States an estimated 68% of fourth graders are reading below grade-level. This problem continues through high school with 64% of twelfth graders below grade-level (Statistics: What's the problem?, 2000). Literacy skills vital for future academic success begin developing long before fourth grade. Literacy skills in early childhood are one of the primary determinants of later literacy ability (Butler, Marsh, Sheppard, & Sheppard, 1985). Deficient literacy skills in childhood continue into middle childhood (Juel, 1988), high school (Stevenson & Newman, 1986), and adulthood (Bruck, 1998). Persistent inadequate literacy skills in the school years contribute to learning problems due to the need for literacy skills for learning all academic subjects (Chall, Jacobs, & Baldwin, 1990).

Literacy is also critical for life success outside of school. Everyday tasks such as reading bills, filling out forms (e.g., applications), and writing checks require literacy skills. The inability to perform such tasks negatively affects psychological and social well-being (Maughan, 1995). Also, low educational attainment due to inadequate literacy skills is associated with poverty, greater health problems, and reduced life longevity (Labov, 2003). Poverty increases the risks for teenage pregnancy, dropping out of school, and witnessing or being involved in violence and/or abuse (Harding, 2003; Korbin, 2003).

The foundation for conventional literacy skills is established during the preschool years through emergent literacy (Teale & Sulzby, 1986). Emergent literacy consists of knowledge, skills, and attitudes that are "developmental precursors" to conventional literacy (Whitehurst & Lonigan, 1998, p. 848). Emergent literacy skills include oral language ability, phonological processing ability (i.e., sensitivity to the organization of sounds in oral language), receptive vocabulary, and concepts of print (Lonigan, Burgess, & Anthony, 2000; Whitehurst & Lonigan).

Early childhood experiences set the stage for developing these necessary emergent literacy skills (Hockenberger, Goldstein, & Haas, 1999). One common method of promoting emergent literacy skills during childhood is through parent-child book reading. Research reviews have documented the value of parent-child book reading for developing emergent literacy skills (Bus, van Ijzendoorn, & Pellegrini, 1995; Scarborough & Dobrich, 1994; Whitehurst & Lonigan, 1998). Preschool children gain oral vocabulary skills (Elley, 1989; Sénéchal, LeFevre, Thomas, & Daley, 1998), phonological processing skills (Bus et al.; Sénéchal, LeFevre, Hudson, & Lawson, 1996), and receptive vocabulary (Elley; Sénéchal & LeFevre, 2002) through parent-child book reading experiences. Parent-child book reading also increases preschool children's knowledge about print concepts, such as the difference between pictures and words, the direction of reading, and the meaning of punctuation marks (Crain-Thoreson & Dale, 1992; Wells, 1985; Whitehurst et al., 1994a). Reading books to young children promotes the development of these emergent literacy skills through adult-child book reading, particularly parent-child book reading.

Parents use various strategies during book reading that foster emergent literacy skills. These strategies include asking questions, offering feedback, providing associations (i.e., referring to a child-related experience during book reading), reading book text, pointing, supplying labels, and presenting elaborations. Parents who ask questions and offer feedback facilitate increases in child vocabulary (Sénéchal, Cornell, & Broda, 1995a). Providing associations during parent-child book reading initiates interactions that promote vocabulary development (Hockenberger et al., 1999). Children discover word meanings from book text (Sénéchal & Cornell, 1993). Pointing during parent-child book reading ensures that parent and child are attending to the same picture or word and may facilitate receptive vocabulary development (Miller & Pressley, 1987). Parent-child interactions that include elaborating on the book and discussing labels also lead to greater vocabulary development (Dickinson & Smith, 1994).

Available research focuses on parent-child reading experiences and emergent literacy skills during the preschool years. However, general public literature emphasizes the importance of reading to infants. Popular literature such as *Readers Digest* (Bush, 1990) and *Family Fun* (Leonhardt, 1997) promote reading to children during the infant/toddler years. In addition, many parents report beginning parent-child book reading between 8 and 17 months of age (Karrass, VanDeventer, & Braungart-Rieker, 2003; Lyytinen, Laakso, & Poikkeus, 1998; Sénéchal et al., 1996, 1998). Furthermore, even though research focuses mainly on preschool children ages 2 to 5, larger effects for parent-child book reading are found for the younger, 2-year-old, preschool children (Bus et al., 1995). Nevertheless, parent-child book reading research continues to focus on preschool aged children with 2-year-olds being the youngest age considered. Thus,

although many parents read to children at age 1, most research on parent-child book reading does not occur until age 2 or later.

Another aspect lacking in available research is the impact of father-child book reading on emergent literacy skills. Most research focuses on mothers or parents as a group. The impact of father-child book reading on emergent literacy is lacking in available research. However, by 30 months of age 42 to 60% of fathers are reading to their children (Scarborough, Dobrich, & Hager, 1991). Correlational evidence indicates that children read to more by their fathers maintain more adequate literacy skills over time (Scarborough et al.). Also, fathers who read to their child have children with greater vocabulary complexity, symbolic gestures, and expressive vocabulary (Lyytinen et al., 1998). Thus, fathers read to their children and influence literacy skills. Specific emergent literacy skills beyond oral language that may be advanced through father-child book reading needs to be explored further in studies of children's emergent literacy.

The impact of parent-child book reading on emergent literacy skills in low-income populations is also scarce in available research. White middle-class populations are widely studied (Scarborough et al., 1991; Sénéchal et al., 1995a; Whitehurst et al., 1988). Low-income samples tend to elicit examination from intervention studies that typically place book reading in a teacher-child instead of parent-child context (Dickinson & Smith, 1994; Valdez-Menchaca & Whitehurst, 1992; Whitehurst et al., 1994a). However, many studies on low-income populations do not occur in the context of parent-child book reading, whereas studies on White middle-class populations mostly occur in this context. Parent-child book reading in low-income populations needs examination.

Inadequate literacy skills profoundly impact the lives of adults and children. Literacy is important for the well-being, education, and daily functioning of individuals. While general knowledge accepts book reading as important for the development of emergent literacy skills in children, studies examining the impact of parent-child book reading during younger ages on later emergent literacy skills in kindergarten are nonexistent. In addition, fathers impact literacy skills, thus requiring examination of father-child book reading and emergent literacy skills. Lastly, low-income populations need to be studied in a parent-child context.

Study Purpose

The purpose of this study was to analyze the impact of father-child book reading at 14, 24, and 36 months on emergent literacy skills at pre-kindergarten (age 4 or 5) in a low-income population. To gain an understanding of the process by which father-child book reading exerts an impact on emergent literacy skills, the behaviors of fathers when reading with children were examined. Videotaped observations of father-child book reading were observed to measure what they did during book reading at 14, 24, and 36 months. Children's assessment data for oral language ability, phonological processing ability, receptive vocabulary, and concepts of print were examined at pre-kindergarten. A number of research questions were addressed in this study.

1. What book reading strategies do fathers use during parent-child book reading with their children at 14, 24, and 36 months of age?
2. What book reading strategies by fathers with their children at 14, 24, and 36 months of age predict children's emergent literacy at pre-kindergarten?

3. Is the effect of book reading on emergent literacy cumulative (best if high at all 3 ages), recent (most impact at most recent age), or early (best if at earliest age)?

CHAPTER II

REVIEW OF THE LITERATURE

This chapter includes the theoretical framework for this study and a review of emergent literacy and parent-child book reading research. First, an overview of Vygotsky's theory describes how parent-child book reading can foster children's emergent literacy skills. The following section examines the empirical literature on four emergent literacy skills: oral language, phonological processing, receptive vocabulary, and concepts of print. Next, a description of what parents do during parent-child book reading will be explored. Then, a review on parent-child book reading and oral language, phonological processing, receptive vocabulary, and concepts of print will be presented. Afterward, the importance of father-child book reading will be considered. Lastly, parent-child book reading in low-income populations will be reviewed.

Theoretical Framework

This study will be guided by Vygotsky's theory of cognitive development. According to Vygotsky, signs (i.e., speech, writing systems, and numbering systems) are an important aspect of human culture (Vygotsky, 1978). Learning to read requires mastery of particular signs. Oral language and instruction in the symbols for creating words (i.e., letters) are important aspects of learning to read. An oral representation of a word is essential for developing an understanding of the written word. If a word is not understood orally, it is also insignificant as a written word. An understanding of the symbols used to create a word (i.e., letter-word knowledge) is also fundamental for

learning to read. Vygotsky contended that these literacy skills require formal instruction (Crain, 2000). Formal instruction for learning to read usually takes place during the first grades in school. However, both formal and informal emergent literacy skills instruction generally takes place in the home before kindergarten.

Parental instruction in emergent literacy may come from parent-child book reading experiences through the practice of "scaffolding." Scaffolding is the process whereby children learn through the aid of someone more experienced, usually an adult (Crain, 2000). During scaffolding a parent builds on skills the child already possesses, bringing the child to a higher level of cognitive development. For example, during parent-child book reading when a parent labels a known object with a different label (e.g., known object "baby," unknown label "infant") they are providing scaffolding for the child. The child understands the object, but learns a new label.

The most effective way to implement scaffolding is by interacting with a child in their "zone of proximal development" (ZPD; Conner, Knight, & Cross, 1997; Crain, 2000). The ZPD is the distance between a child's present capabilities and the capabilities possible with aid, or scaffolding, from a more experienced individual (Crain). The ZPD embodies the region of development where children have the potential to advance, but may not learn autonomously. For example, explaining the definition of a new word found in a storybook demonstrates scaffolding in the ZPD. The parent uses words the child knows to explain a word that is unknown to the child and which the child may not have understood without parental explanation. Emergent literacy development in children is most effectively achieved with parental scaffolding in the ZPD (Conner et al.). Parents are adept at understanding the capabilities of their child and interacting in the ZPD

(Connor et al.; DeLoache, & DeMendoza, 1987; Goodsitt, Raitan, & Perlmutter, 1988; Martin, 1998).

Parent-child book reading provides opportunities to foster the development of emergent literacy. Parental language during book reading is more complex than during other daily routine activities (Dunn, Wooding, & Herman, 1977). Also, 5% of daily language interactions occur during book reading (Wells, 1985), thus promoting oral language. Parents also label more objects during book reading than during other daily interactions (Ninio & Bruner, 1978), which encourages receptive vocabulary development. Parent-child book reading also affords scaffolding in the areas of phonological processing and concepts of print. Occasions for rhyming, identifying letters, and learning the direction of print (and other print concepts) are abundant during parent-child book reading. Parent-child book reading provides an important opportunity for scaffolding emergent literacy skills in the ZPD.

Emergent Literacy

Four areas of emergent literacy are predictive of later conventional literacy ability: oral language, phonological processing, receptive vocabulary, and concepts of print (Lorigan et al., 2000; Whitehurst & Lonigan, 1998). Longitudinal research has revealed the importance of emergent literacy skills in predicting grade school decoding ability (Lonigan et al.). Decoding consists of the ability to convert visual symbols into meaningful language, which is a vital skill for conventional literacy ability. Each emergent literacy skill will be examined in relation to later conventional literacy ability, specifically decoding ability.

Oral Language

Oral language ability during the preschool/kindergarten years remains a stable indicator of later differences in literacy ability (Bishop & Adams, 1990; Butler et al., 1985). Correlational and longitudinal evidence denote three aspects of reading for which oral language contributes. First, oral language skills have a significant impact on decoding ability (Wagner et al., 1997). Before a word can be understood in written form, it should be understood in oral form. This provides an oral language reserve that can be drawn from to understand written representations of words. Thus, greater vocabulary skills afford more opportunities for understanding written words.

Second, oral language skills influence the development of reading comprehension (Snow, Barnes, Chandler, Hemphill, & Goodman, 1991). In relation to oral language skills providing a representation of written words, oral language also contributes to comprehending written words. Greater oral language skills imply understanding the meaning of greater numbers of words. Thus, oral language contributes to overall reading comprehension.

Last, oral language is positively correlated with phonological processing ability (Burgess & Lonigan, 1998; Wagner et al., 1997). Phonological processing is the ability to organize sounds in language. Rhyming, identifying syllables, and understanding letters and letter sounds are four aspects of phonological processing. The ability to detect rhymes, identify syllables, and understand letters and letter sounds generally begins with oral language (Olson, Torrance, & Hildyard, 1985). Proficient oral language skills may provide more preparation in using phonemes that supplies the child with greater phonological processing skills for developing conventional literacy.

Phonological Processing Ability

Phonological processing ability is an important emergent literacy skill which contributes in a unique way to conventional literacy ability, particularly decoding (Lonigan et al., 2000). In fact, phonological processing is the strongest predictor of later reading achievement and the only emergent literacy skill that has been found to play a causal role in learning to read (Byrne & Fielding-Barnsley, 1991; Whitehurst & Lonigan, 1998). Children with well developed phonological processing skills learn to read more quickly, even after partialing out IQ, receptive vocabulary, memory skill, and socioeconomic status (Wagner & Torgesen, 1987). Phonological processing includes skill in letter-word identification, letter-sound knowledge, spelling, and word recognition (Adams, 1990; Whitehurst & Lonigan, 1998).

Letter-word identification is the ability to identify the alphabetic letters. Letter-sound knowledge is the ability to identify alphabetic letters and the sounds associated with each letter. Letter-word identification and letter-sound knowledge provide the foundation for conventional reading skills such as decoding and spelling (Adams, 1990). At school entry, one of the strongest predictors of short- and long-term achievement in reading is letter-sound knowledge (Stevenson & Newman, 1986).

Letter-sound knowledge is also predictive of spelling ability. Distinguishing among the varied sounds of each alphabetic letter contributes to spelling ability and processing letter-word order (Adams, 1990). Knowledge of spelling facilitates fluent decoding during reading (Robinson, McKenna, & Wedman, 1996).

Word recognition is the ability to see words as patterns of letters instead of identifying individual letters (Adams, 1990). Phonological processing includes skills for

combining sounds and the ability to see words as patterns. Children who identify the sound for every letter in each word and skip unknown letters lose meaning and the ability to remember the words. Children who recognize the pattern of sounds for combinations of letters are better able to capture meaning in the wording and content.

Receptive Vocabulary

Receptive vocabulary is the ability to recognize the meaning or representation of a spoken word. Receptive vocabulary in the preschool years is associated with early grade school conventional literacy skills (Sénéchal & LeFevre, 2002). While receptive vocabulary is not as strongly associated with conventional literacy skills as phonological processing, there is still a unique contribution made. The ability to understand the meaning or possess a representation of a word is significant for learning to read. Receptive vocabulary plays a vital role in the relationship between language skills and literacy knowledge (Dickinson, McCabe, Anastasopoulos, Peisner-Feinberg, & Poe, 2003).

Concepts of Print

Concepts of print include the direction of reading, the difference between print and pictures, the meaning of punctuation marks and spaces between words, and the use of print (e.g., that it tells a story or conveys information). Concepts of print during the early grade school years predicts reading comprehension and decoding ability at later grades (Tanmer, Herriman, & Nesdale, 1988). Understanding where to read, how to follow print, what words look like, and why print is used are basic and fundamental skills for learning to read. Oral language, phonological processing, receptive vocabulary, and

concepts of print are all valuable emergent literacy skills that provide long-term consequences for later conventional literacy.

What Parents Do During Book Reading

Parents are experts at understanding their child's level of development (Connor et al., 1997; DeLoache & DeMendoza, 1987; Goodsitt et al., 1988; Martin, 1998). Asking questions, offering feedback, providing associations, reading book text, pointing, supplying labels, and presenting elaborations during parent-child book reading enhance children's emergent literacy outcomes. Parents often know the book reading strategies that best suit their child's understanding. The strategies used during parent-child book reading promote child involvement in the book. Children learn best through these active learning strategies (Dickinson & Smith, 1994).

Parents who ask questions and offer feedback facilitate increases in child vocalizations (Sénéchal et al., 1995a). In turn, child vocalizations encourage more questions and feedback from parents. These two book reading strategies exert more effects on child language and vocabulary skills than other passive strategies, such as pointing and supplying labels (Valdez-Menchaca & Whitehurst, 1992). Children gain vocabulary skill complexity, syntactic complexity, verb and noun knowledge, and compound sentence understanding with questions and feedback during book reading. Providing associations during parent-child book reading also initiates interactions (Hockenberger et al., 1999). However, associations during parent-child book reading have not been examined in relation to emergent literacy skills.

Reading book text is probably the most common parental strategy during book reading. However, this strategy is considered a less active strategy and overlooked in many research studies. For example, Whitehurst and colleagues (1988) began a reading intervention program using *dialogic reading*. Dialogic reading teaches parents and teachers to read using open-ended questions and elaborations, which benefits oral vocabulary and syntactic complexity. Dialogic reading excludes reading the book text as a reading strategy because there is no causal link between reading book text and language development (see Valdez-Menchaca & Whitehurst, 1992; Whitehurst et al., 1994a; Whitehurst et al., 1994b). However, children's books contain vocabulary more sophisticated than that used by parents in speaking to their child (Hayes & Ahrens, 1988). Sénéchal and Cornell (1993) found children successfully discover word meanings from reading book text and that reading the book text was just as effective in boosting vocabulary as asking questions. Thus, reading book text needs examined in relation to emergent literacy outcomes.

Pointing during parent-child book reading ensures that parent and child are attending to the same picture or word (Miller & Pressley, 1987). This reading strategy is a method of attention-getting (Ninio & Bruner, 1978). Joint attention resulting from pointing makes certain that children are encoding the information intended by the parent. Consequently, pointing improves receptive vocabulary skills in preschool children (Sénéchal & Cornell, 1993).

Supplying labels and elaborations during book reading is a way of providing more information for the child. Children who are supplied with labels and elaborations during repeated book reading interactions are better able to recall book content (Cornell,

Sénéchal, & Broda, 1988). Also, interactions that include elaborating on the book and discussing labels lead to greater vocabulary development (Dickinson & Smith, 1994). Each of these book reading strategies were categorized and coded in this study.

Impacts of Parent-Child Book Reading on Children's Emergent Literacy

Parent-child book reading may be considered one of the principal endeavors for success in conventional reading (National Academy of Education, 1985). This endeavor during the preschool years is predictive of oral language, phonological processing, receptive vocabulary, and concepts of print. Parent-child book reading will be examined in relation to each emergent literacy skill.

Oral Language

Oral language is the most common benefit found from parent-child book reading and yields the largest effect size ($d = .67$; Bus et al., 1995). Various aspects of oral language have been found to benefit from parent-child book reading. Expressive vocabulary is one such benefit and includes the acquisition of nouns and verbs (Elley, 1989; Feitelson, Goldstein, Iraqi, & Share, 1993; Lyytinen et al., 1998; Valdez-Menchaca & Whitehurst, 1992; Whitehurst et al., 1994a). Parent-child book reading may account for as much as 12% of the variance in expressive vocabulary during the preschool years (Sénéchal et al., 1996). Children's books contain many diverse words, known and unknown that are reinforced or learned through parent-child book reading experiences.

Lexical skill (i.e., morphemes of a language), mean sentence length, mean length of utterance, grammatical skill (i.e., knowledge of rules for speaking and writing),

syntactic complexity (i.e., understanding relationships among words and phrases for sentence formation), and compound sentences are also oral language skills benefited by parent-child book reading experiences (Feitelson et al., 1993; Lyytinen et al., 1998; Valdez-Menchaca & Whitehurst, 1992). Book reading provides the opportunity for children to hear their native language in a formal and structured manner. Children's books are generally written in proper grammatical form. Thus, children learn grammar and other language-related skills as they read aloud with their parents.

Phonological Processing

Phonological processing is only moderately positively affected by parent-child book reading (Sénéchal et al., 1998). Reading aloud affords occasions for listening to the organization of sounds (e.g., rhyming), discussing letter sounds, and identifying words. Rhyming during daily interactions is scarce. However, reading books like *One Fish, Two Fish, Red Fish, Blue Fish* (Dr. Seuss, 1960) supplies ample prospects for rhyming. Discussing letter sounds and identifying letters may occur during daily communication, but parent-child book reading provides prime time for these activities.

Parent-child book reading impacts different aspects of phonological processing: identifying sounds and letters, phoneme deletion (i.e., ability to drop syllables from words given orally), and sound categorization (i.e., rhyming). Identifying letters and sounds is influenced by dialogic reading, or parent-child book reading where the child is actively involved (Whitehurst et al., 1994a). Parent-child book reading also predicts phoneme deletion (Crain-Thoreson & Dale, 1992) and sound categorization (Sénéchal et

al., 1998). These phonological processing skills form the foundation for the development of emergent literacy.

Receptive Vocabulary

Preschool children successfully master learning word meanings from parent-child book reading (Sénéchal & Cornell, 1993). Children learn five new words a day (Read, 1980) and 27% of new words may be accounted for by parent-child book reading (Sénéchal & Cornell). Listening to a book a single time can boost receptive vocabulary. Parent-child book reading provides children with the opportunity to see pictures of new words and learn the representation of the word (Sénéchal, Thomas, & Monker, 1995b). Also, as children experience repeated reading of familiar books they are able to practice retrieval of the new words and solidify the representation. Receptive vocabulary has been shown to endure longitudinally and as much as 9% of the variance in receptive vocabulary is accounted for by parent-child book reading experiences (Sénéchal & LeFevre, 2002).

Concepts of Print

Parent-child book reading provides the opportunity for children to gain an understanding of the direction of reading, the difference between print and pictures, the meaning of punctuation marks and spaces between words, and the use of print. Parental book reading strategies promote child discovery of what words are, where words begin, and how to distinguish one word from another. Pointing to words during book reading and following print with pointing provide children with an understanding of how to follow print, where print begins, and what spaces represent.

Parent-child book reading enhances children's understanding of concepts of print (Crain-Thoreson & Dale, 1992; Justice & Ezell, 2000; Whitehurst et al., 1994b). Dialogic book reading and other interventions reveal a statistically significant effect for parent-child book reading on concepts of print (Justice & Ezell; Whitehurst et al.). Correlational evidence also conveys the efficacy of parent-child book reading for elevating child understanding of concepts of print (Crain-Thoreson & Dale). Thus, children's ability to understand concepts of print is significantly expanded by parent-child book reading.

Oral language, phonological processing, receptive vocabulary, and concepts of print are all affected by parent-child book reading experiences. The studies reviewed in this section focused on preschool children. Yet, parent-child book reading begins between 8 and 17 months of age (Karrass et al., 2003; Lyytinen et al., 1998; Sénéchal et al., 1996; Sénéchal et al., 1998). Also, studies of younger children show larger effects for book reading on emergent literacy (Bus et al., 1995). This study examined parent-child book reading activities at 14, 24, and 36 months of age in relation to emergent literacy at pre-kindergarten.

Father-Child Book Reading

Fathers are significant figures in their children's lives. Research has established a link between positive father-child play interactions and self-regulation (Lindsey, Mize, & Pettit, 1997), social skills (Pettit, Brown, Mize, & Lindsey, 1998), and popularity and cooperative behavior (Kerns & Barth, 1995). Father-child book reading is a type of play. Therefore, this study assumed fathers provide valuable opportunities for child development, specifically emergent literacy development, during book reading play.

Many book reading studies include "parents," but do not differentiate the effects of mother's and father's behaviors (Sénéchal & LeFevre, 2002). However, studies that separate parents in their examination find fathers and mothers exert different influences on their children and are influenced differently by their children. For example, Karrass and colleagues (2003) found fathers were susceptible to child temperament during parent-child book reading interactions, whereas stress level was a more salient factor for mothers. In addition, Lyytinen and colleagues (1998) found that fathers who read to their children had children with longer attention spans, whereas no significant differences were found for mothers.

Almost two-thirds of fathers read to their child by the child's 30th month and children who are read to by their fathers become better readers (Scarborough et al., 1991). Father-child book reading impacts child vocabulary complexity, symbolic gestures, and expressive vocabulary (Lyytinen et al., 1998). This indicates that father-child book reading influences child oral language skills, which is only one emergent literacy skill. Available research does not specifically address father-child book reading and the impact on phonological processing, receptive vocabulary, and concepts of print. Yet, the studies conducted by Lyytinen and colleagues and Scarborough and colleagues demonstrate the importance of father-child book reading in emergent literacy development. Thus, this study focused on father-child book reading experiences.

Low-income Populations

White middle-class populations receive a great deal of attention in relation to parent-child book reading research (e.g., Justice & Ezell, 2000; Scarborough et al., 1991;

Sénéchal et al., 1995a; Whitehurst et al., 1988). The growth in emergent literacy skills from parent-child book reading experiences in White middle-class samples demonstrates the importance of parent-child book reading for progression in oral language skills, phonological processing skills, receptive vocabulary, and concepts of print. The book reading studies previously reviewed generally sampled White middle-class populations. These studies verify the positive consequences of parent-child book reading.

Low-income populations have a propensity to elicit examination from intervention studies (see Dickinson & Smith, 1994; Valdez-Menchaca & Whitehurst, 1992; Whitehurst et al., 1994a). The context of book reading in interventions takes place with teacher-child experiences rather than parent-child experiences. However, parent-child experiences appear to play a more critical role in early development than teacher-child experiences (Whitehurst et al., 1994b). In addition, the focus of many book reading interventions is to improve oral language skills. While oral language skills are an important aspect of emergent literacy, phonological processing skills, receptive vocabulary, and concepts of print also contribute to the development of emergent literacy. Ninio (1980) concluded that any income group is able to benefit from book reading experiences. However, a paucity of research examines low-income populations in regard to parent-child book reading rather than teacher-child book reading.

Summary

Emergent literacy skills are vital to conventional literacy ability. Parent-child book reading experiences afford children with opportunities to develop emergent literacy skills that will in turn aid the development of conventional literacy skills. Preschool

children develop oral language, phonological processing, receptive vocabulary, and concepts of print as they enjoy parent-child book reading experiences. Vygotsky's views on the development of signs for cultivating emergent and conventional literacy skills provides an excellent theoretical framework for studying parent-child book reading and its effect on emergent literacy development. Scaffolding within the ZPD during parent-child book reading provides the most effective way for encouraging the development of emergent literacy skills.

The current study aimed to further the literature on parent-child book reading and emergent literacy by focusing on four emergent literacy skills instead of concentrating on only one or two and by considering multiple specific book reading strategies rather than book reading in general. Also, this study furthered the literature by examining children of younger ages than those generally studied. In addition, this study specifically addressed the independent impact of father-child book reading on emergent literacy instead of focusing on parents as a group or only mothers. Lastly, this study examined a low-income population in the context of parent-child book reading. Consequently, future studies will have a greater conception of the impact father-child book reading in low-income families in the infancy and toddler years may exert on children's development of emergent literacy.

CHAPTER III

METHODS

Design

This study was part of the larger Bear River Early Head Start Research project at Utah State University, which has been studying Early Head Start families since 1996. The research design for this study was longitudinal correlational. Interviews and observations were used to obtain demographic information, father's self-report of time spent book reading, and father-child book reading observations. Direct assessments were used to obtain child development data. The subjects, procedures, measures, and data analysis will be addressed in the following sections.

Subjects

Originally, 200 families were recruited and eligible for participation in the Bear River Early Head Start study. To meet Head Start program requirements, over 90% of the families were low income as defined by federal poverty guidelines and most families (97%) received some sort of public assistance such as Medicaid, food stamps, or WIC (Roggman, Boyce, Cook, Callow-Heusser, & Hart, 2002a).

Of the 200 families, 179 fathers were identified as available for interviews and observations. Fathers were included if they were available during at least one child age point. One hundred fifty-seven (88%) fathers participated during at least one interview session and 119 (66%) father participated in at least one observation session. Thirty-eight (21%) fathers participated in all four assessments. However, due to language barriers,

tape problems, or missing data for child outcomes, only working data were available for 33 (18%) fathers that participated in all four interview and observation sessions.

Three academic year cohorts of children were followed beginning in 1996, whose birthdates extended from November, 1995, to May, 1998. One hundred five children were assessed from cohort one, 73 from cohort two, and 22 from cohort three. Forty-eight percent of children were male. Seventy-one percent of the sample were White, 14% Latino, 4% Native American, and 11% other or biracial. Additional demographic information is provided in Table 1.

Sixty-five percent of fathers obtained a high school diploma or GED. Fathers who were observed at 14 months had significantly higher education, $t(152) = 2.514, p > .05$, than those who were not observed. Other attrition analyses indicated that mother education was the most significant factor associated with father participation. There were no significant differences for child oral language, phonological processing, receptive vocabulary, or concepts of print for those children whose fathers participated in interviews and/or observations as opposed to children whose fathers did not participate.

Procedures

Participants were contacted at 14 months, 24 months, 36 months, and pre-kindergarten for interviews, child measurement, and videotaped observations. Consent for father-child participation was obtained at each assessment session (see Appendix A). Families were given copies of videotaped observations, gifts, and monetary compensation to reduce attrition. Fathers received \$10 for each of the first three assessment and

Table 1

Description of Subject Demographic Information

Demographics	<i>n</i>	Min	Max	<i>M</i>	<i>SD</i>
Income	124	\$389	\$8500	\$3085.84	\$1552.03
Age of father at child birth	153	15	52	26.03	6.49
Age of mother at child birth	200	14	44	22.78	5.41
Number of hours worked/week-father	164	0	84	37.98	14.85
Years of education-mother	200	3	17	12.03	2.38
Years of education-father	160	5	20	12.87	2.39

observation sessions and \$50 at the pre-kindergarten assessment with a total of \$80 for participation. At each assessment, the child was given an age appropriate toy for participation. For example, children received a can of play dough at the pre-kindergarten session.

Data was collected at four assessment points. Demographic information was obtained during father interviews at the first assessment point (see Appendix B). Father's self-report of time spent reading was obtained at 14, 24, and 36 months. Father-child book reading observation sessions were videotaped at 14 months, 24 months, 36 months, and pre-kindergarten. The coding of the 14-, 24-, and 36-month videotaped observations will be described in the next section. Pre-kindergarten videotaped observations were used for the child's oral language measure. The pre-kindergarten child development

assessment included measurement in phonological processing, receptive vocabulary, and concepts of print, which will be described in the next section.

Measures

Questionnaires were administered to obtain demographic information. Time spent book reading was obtained through father's self-report and book reading observations. Father book reading strategies were measured by coding videotaped observation sessions using a scheme with categories of book reading strategies. Child oral language was measured using transcriptions from the pre-kindergarten father-child book reading videotaped observation session. Phonological processing, receptive vocabulary, and concepts of print were measured with various instruments.

Time spent book reading. Time spent book reading was obtained through father's self-report and through father-child observation at 14, 24, and 36 months. Fathers were asked at 14 months how often they read to or told stories to their child. Answers for this question were scaled from 1 to 6 and ranged from reading "several times a week" (1) to "not at all" (6). Fathers were asked at 24 and 36 months how often they read stories to their child in the past month. Answers for this question were scaled 1 to 6 and ranged from "more than once a day" (1) to "not at all" (6).

Father-child book reading was videotaped as part of a 10-minute observation session in the child's home at 14 months, 24 months, 36 months, and pre-kindergarten. Father and child were given three bags labeled 1, 2, and 3. The first bag contained a book and the other two bags contained various age appropriate toys. The book in the 14-month bag was *Carl Goes Shopping* (Day, 1992). The 24 and 36-month book was *The Very*

Busy Spider (Carle, 1984). These books were chosen based on their appropriateness for the age of the child. Fathers were instructed to start with the first bag, move to the second, and finish with the third. They were also instructed to play with the child however they liked. Since fathers were given 0 to 10 minutes to read the book and play with the other toys, they chose the amount of time to spend with the book in the first bag. Father-child book reading began when the father made a reference to the book and ended when the father and child either put the book aside or were not attending to the book for more than 15 seconds. If the father and child returned to the book after playing with the toys in bags 2 and 3, this time spent book reading was added to any other time spent with the book. Time was recorded in seconds.

Father book reading strategies. The observations sessions at 14, 24, and 36 months were also used for coding father book reading strategies. A trained observation team coded the father-child book reading observations for the frequency of various book reading strategies. Book reading strategies were coded using a scheme developed by Storch and Didow (1999) and adapted for use on the Bear River Early Head Start Research project (Holbrook, Roggman, Boyce, Newland, & Hart, 2002). The original scheme contains 18 categories; this study used 12 categories with positive (PF) and negative (NF) combined as one feedback (FB) code, resulting in 11 codes. Descriptions and examples of the categories are summarized in Table 2 (see also Appendix C). Six codes were omitted as possible categories for this study: context recall (CR; i.e., child recalls book content), direct attention (DA), dramatization (DR; i.e., pretending related to picture), attending (AT), other verbalization (VO; i.e., any vocalization that didn't fit in any other category), and unintelligible response (UR; i.e., words which were not

Table 2

Description of Categories for Father Book Reading Strategies

Category	Description	Example
Read text from book (RT)	Reading words from the book	"Good dog, Carl."
Simple elaboration (SE)	Elaborating on the text by making sounds	"Woof."
Complex elaboration (CE)	Providing information pertaining to detail or function	"Clocks tell us the time."
Provides label (PL)	Labeling a picture	"That's a dog."
Asks for/requests label (RL)	Asking child to name a picture	"What's that?"
Requests a point (RP)	Asking child about location of a word or picture	"Where's the dog?"
Requesting other (RO)	Asking for information other than a point or label	"What is the dog doing?"
References (RF)	Relating text or pictures to the experience of the child	"You have a dog too."
Comparisons (CP)	Pointing out differences between the text/pictures and child's experience	"Your dog is smaller."
Points/taps picture (PP)	Physically pointing towards or on a picture, tapping picture	Pointing to the dog.
Feedback (FB)	Feedback which reaffirms, acknowledges correct/incorrect, or discredits what the child says	"That right, it's a dog."

understandable). These codes were omitted due to lack of research evidence for their use (CR & DR), lack of book-related talk (VO & UR), or lack of purpose for this study (DA & AT). These codes were originally developed for preschool children. However, fathers also used some of these strategies with younger children during book reading. Any strategies observed which did not fit into the above categories were evaluated for the possibility of creating a new category.

Before book reading strategies were coded, book reading sessions were transcribed. One coder transcribed all videotapes, with reliability checks performed on every fourth transcription (25%). Book reading sessions were broken down into cycles. Cycles began with a point or reference to a new page in the book. Cycles ended when the page was turned or the pictures were not visible anymore. Cycles lasting less than 3 seconds were excluded from analysis because little interaction took place. Each cycle included transcribed book reading strategies (i.e., language and pointing from the book page) that were then categorized. One category was coded for each strategy used by the father. Two categories were coded only if the father provided feedback for the child and expanded on the child's vocalization. This would be coded as feedback and elaboration (FB, SE, or CE; see definitions in Table 2) or feedback and label (FB, PL), depending on the exact wording of the father's response. The codes were based on grammatics of speech and not on tone, inflection, or pragmatics. Scoring was assessed by dividing the total number of occurrences of a specific book reading strategy (i.e. coded categories) by the total number of cycles. This standardized the frequency of book reading strategies and accounted for varying lengths of time spent with the book and varying lengths of books across time points.

Coders had established reliability when five training tapes were coded with 90% accuracy. Inter-rater reliability statistics for categories were obtained for every fifth father observation (20%). Reliability for categories was calculated by adding the categories agreed upon and dividing this by the total number of categories agreed and disagreed. Agreement for the categories was 89% at 14 months, 92% at 24 months, and 88% at 36 months. Overall category agreement was 90%. If agreement dropped below 80%, coders

met to settle differences. Coders also met regularly to resolve problems, answer questions, and prevent coder drift. These book reading strategies have been revealed as typical for parent-child book reading (Dickinson & Smith, 1994; Hockenberger et al., 1999; Miller & Pressley, 1987; Sénéchal & Cornell, 1993; Sénéchal et al., 1995a), which indicates evidence for face validity.

Oral language. Father-child book reading transcriptions from pre-kindergarten were used to assess child oral language. Oral language was determined using the Child Language Data Exchange System (CHILDES; MacWhinney, 1991). This system uses two subsystems to provide data analysis on child language. First, the Codes for the Human Analysis of Transcripts (CHAT) system provided a format for the transcriptions. After the transcriptions were formatted, the Computerized Language Analysis (CLAN) system analyzed the language from the CHAT transcriptions. The CLAN system provided data analysis on the child's mean length of turn (MLT; number of words divided by the number of turns) and the mean length of utterance (MLU; number of morphemes divided by the number of utterances). These are standard measures of children's oral language (Bus et al., 1995; Crain-Thoreson & Dale, 1992; Dickinson & Smith, 1994).

Phonological processing. The Woodcock-Johnson Revised (WJ-R; Woodcock & Johnson, 1989, 1990) was used to measure letter-word identification at pre-kindergarten. The WJ-R Letter-Word Identification subscale measures phonological processing skills. The children were instructed that some questions were easy and some were hard, but to answer the questions to the best of their ability. For the first items the interviewer pointed to two different symbols and the child was asked to point to the symbol that matched the

picture shown. For the next few items the interviewer pointed to a letter in the test booklet and asked the child to name the letter. The interviewer discontinued testing when the child could not name six letters in a row. One point was awarded for each correct answer. The sum of the correct answers was an indicator of letter-word identification.

The test authors have indicated a Cronbach's alpha ranging from .84 to .94 for the WJ-R (1989, 1990). The Letter-word Identification subscale has a Cronbach's alpha of .92. Concurrent validity on this measure ranges from .77 to .91 with measures of intelligence, such as the *Wechsler Intelligence Scale for Children-Third Edition* (WISC-III; Wechsler, 1991).

Receptive vocabulary. Receptive vocabulary was assessed using the Peabody Picture Vocabulary Test (PPVT; Dunn & Dunn, 1997). Following PPVT protocol, children were shown four pictures and asked to point to the picture that best indicated a word given orally by the interviewer. One point was given for each correct answer and the sum of correct answers was an indicator of receptive vocabulary.

A Cronbach's alpha ranging from .92 to .98 is the test author's estimated reliability of the measure. Split-half reliability is .94, and test-retest reliability ranges from .91 to .94. The PPVT is widely used for determining child outcomes. It has content, criterion, and construct validity, as measured by other widely used tests, such as the WISC-III (Wechsler, 1991) and other standardized tests of vocabulary and intelligence (Dunn & Dunn, 1997).

Concepts of print. Concepts of print were assessed using the Story and Print Concepts from the Head Start Family and Child Experiences Survey (FACES; FACES Research Team, 1997). This instrument measured book knowledge and print knowledge

at pre-kindergarten. The interviewer read *Good Night Moon* (Brown, 1947) to the child and then asked various questions concerning book and print knowledge. Book knowledge was measured by asking questions about where the front of the book was located, who the author was and what the author did, and what happened in the story. Scores of zero to five were possible for book knowledge and were dependent upon the number of items answered correctly. Print knowledge was assessed by asking questions regarding where the words and pictures were located. Print knowledge was also dependent upon the number of items answered correctly with a range from zero to three.

The reliability for this measure ranges from .42 to .74 using Cronbach's alpha (FACES Research Team, 1997). Book knowledge has a Cronbach's alpha estimated at .55. Print knowledge has an estimated Cronbach's alpha of .71. The Story and Print Concepts subscale has predictive validity with the Early Childhood Longitudinal Survey-Kindergarten Reading scale (.39) and General Knowledge scale (.52; FACES Research Team).

Data Analysis

The three research questions outlined in the first chapter will be addressed in this section. Each question will be accompanied by the corresponding hypotheses and data analysis plan. Lastly, the use of covariates will be addressed.

Research Question 1

What book reading strategies do fathers use during parent-child book reading with their children at 14, 24, and 36 months of age? It was expected that fathers would use

questions, feedback, associations, reading book text, pointing, labeling, and elaborating as book reading strategies during parent-child book reading. It was expected that fathers would use feedback, reading book text, and elaborating more during book reading sessions at 24 and 36 months than at 14 months. It was also expected that fathers would provide labels more at 14 months compared with 24 and 36 months. Various questioning techniques were expected to increase with child age.

First, this question was addressed using descriptive data. Fathers were given a minimum of zero time to spend reading the book and a maximum of 10 minutes. Raw frequency scores for book reading strategies were divided by the total number of seconds spent engaged in parent-child book reading to standardize raw scores. Next, repeated measures Analysis of variance (ANOVA) were conducted to analyze the statistical significance of changes in strategies across ages.

Research Question 2

What book reading strategies by fathers with their children at 14, 24, and 36 months of age predict children's emergent literacy at pre-kindergarten? Mother book reading strategies from 24 months through kindergarten age predict emergent literacy skills (Dickinson & Smith, 1994; Hockenberger et al., 1999; Miller & Pressley, 1987; Ninio & Bruner, 1978; Sénéchal & Cornell, 1993; Sénéchal et al., 1995a; Valdez-Menchaca & Whitehurst, 1992). Though fathers have rarely been studied separately from mothers, there is evidence that fathers play an important role in the development of emergent literacy (Lyytinen et al., 1998; Scarborough et al., 1991). It was expected that father book reading strategies would predict emergent literacy skills at pre-kindergarten.

More specifically, it was anticipated that father book reading strategies would predict child oral language, phonological processing, receptive vocabulary, and concepts of print at pre-kindergarten.

Father book reading strategies at 14, 24, and 36 months were correlated separately with oral language, phonological processing, receptive vocabulary, and concepts of print. Subsequently, a series of separate regressions analyzed the predictive value of book reading strategies on oral language, phonological processing, receptive vocabulary, and concepts of print.

Research Question 3

Is the effect of book reading on emergent literacy cumulative (best if high at all 3 ages), recent (most impact at most recent age), or early (best if at earliest age)? It was expected that father book reading strategies would exert the most influence on emergent literacy skills if book reading strategies were cumulative. A series of regression analyses tested additive effects of father book reading strategies at sequential ages on child emergent literacy.

Covariates

Some studies indicate differences in book reading based on socioeconomic level (SES; Bus et al., 1995). With a homogenous sample of SES in this study, use of income as a covariate may be unnecessary (Scarborough & Dobrich, 1994). However, correlations of book reading strategies and child emergent literacy outcomes with the limited income range in this study were examined to determine whether the inclusion of

income as a covariate was appropriate. Correlational analysis indicated income was not statistically significantly associated with child emergent literacy skills.

Education level of mother was used as a covariate because some studies indicate mother's education level negates the effect of book reading on emergent literacy (Payne, Whitehurst, & Angell, 1994; Sénéchal et al., 1998), while others find book reading remains a salient factor in emergent literacy development despite mother's education level (Sénéchal & LeFevre, 2002; Whitehurst et al., 1994a). Mother's education level appears to be pervasively correlated with child outcomes. For the purposes of this study, mother's education level was used as a covariate in the analyses.

Other possible environmental influences that shape children's emergent literacy development include father's literacy, child oral language ability, child access to literacy related toys and play, and child home literacy environment (McGee & Richgels, 2003). These other environmental influences were not included in this study as covariates. However, future research may be designed to examine the effects of these influences on emergent literacy, as well as mother education and income.

CHAPTER IV

RESULTS

Data for this study were collected when children were ages 14 months, 24 months, 36 months, and again during the spring of their pre-kindergarten year. Father-child book reading observations were collected at all observation sessions and child assessment data were collected at pre-kindergarten. This section will review the results from analyses. First, a description of the data and data management will be addressed. Next, the analyses and results from each research question will be considered.

Data Description

The amount of time spent reading the book was up to the father and child who had been told only to start with the first bag, which contained a book, before going on to the second and then third bag. The frequency of each book reading strategy was calculated as a rate per minute to standardize the frequency across dyads.

All statistical tests were two-tailed and all results reported here are statistically significant at the .05 level. Distribution analyses displayed a right skewness in all book reading strategies and book reading time duration. Recent research, however, suggests that results from statistical analyses of data transformed by conversions for skewed data are not significantly different from results of analyses without data conversions (Norris & Aroian, 2004). Therefore, data conversions were not performed for this study. Collinearity diagnostics demonstrated high or moderate tolerance unless otherwise noted, which allowed use of the variables without alterations. Missing data were excluded from

analyses. A comparison of analyses using listwise and pairwise deletion indicated missing data were random and did not affect the results. Pairwise deletion was used in statistical analyses due to random missing data and multiple regression analyses (Basic Statistics, 2003). Pairwise deletion was also used to include all available data in analyses.

Data Reduction

Child pre-kindergarten concepts of print and oral language each had two measures that were combined for analysis. Concepts of print included book knowledge and print knowledge. Analyses revealed a statistically significant correlation between book knowledge and print knowledge ($r = .35, p < .01$), suggesting that although these subscales may tap into somewhat different constructs, they are similar enough to combine as an indication of general knowledge about print. The mean of book knowledge and print knowledge was used as the measure of concepts of print in all other statistical tests. Analysis also revealed the correlation between mean length of turn (MLT) and mean length of utterance (MLU) as statistically significant ($r = .50, p < .01$). The mean of MLT and MLU was used as the measure of oral language in all other statistical tests.

Research Questions

The statistical analyses of the three research questions outlined in the third chapter are addressed in this section. Statistical analyses are described in text, as well as in tables. The range of fathers with available data at each age point resulted in varying n 's for each

statistical analyses. Any father with data available for a particular statistical analysis was included in that analysis.

Research Question 1

What book reading strategies do fathers use during parent-child book reading with their children at 14, 24, and 36 months of age? Fathers at 14 months spent an average of 2.71 minutes reading the book ($SD = 2.11$; see Table 3) and reported reading to their child about once a week. Fathers at 24 months spent an average of 2.03 minutes reading the book ($SD = 1.48$) and reported reading to their child a few times a week. Fathers at 36 months spent an average of 1.97 minutes reading the book ($SD = 1.01$) and reported reading to their child a few times a week. For the observational measures of book reading strategies, standard deviations were high due to certain strategies being used only by a few fathers. Therefore, both medians and means are described in tables. However, due to the small difference between most means and medians, means are reported in text, and parametric tests are used to analyze change over time.

It was hypothesized that fathers would use questions, feedback, associations, reading book text, pointing, labeling, and elaborating as book reading strategies during parent-child book reading. Fathers did use each of these strategies at all ages. Some strategies occurred rarely, such as comparisons. This strategy only occurred on average between .02 to .05 times per minute during book reading. However, pointing occurred often, over six times per minute (see Table 3). Other strategy frequencies are reported in Table 3.

Table 3

Frequencies per Minute for Father Book Reading Strategies at 14, 24, and 36 Months

Strategy	Min	Max	Mdn	M (SD)
14 month ^a				
Time spent with book (minutes)	0.00	9.93	2.21	2.71 (2.11)
Read text from book (RT)	0.00	2.73	0.49	0.62 (0.67)
Simple elaboration (SE)	0.00	2.94	0.00	0.23 (0.59)
Complex elaboration (CE)	0.00	23.37	2.65	3.32 (3.46)
Provides label (PL)	0.00	9.23	1.86	2.19 (1.94)
Asks for/requests label (RL)	0.00	3.68	0.17	0.63 (0.83)
Requests a point (RP)	0.00	7.28	0.00	0.40 (1.11)
Requesting other (RO)	0.00	15.00	1.58	2.04 (2.14)
References (RF)	0.00	4.62	0.00	0.22 (0.65)
Comparisons (CP)	0.00	0.72	0.00	0.03 (0.13)
Points/taps picture (PP)	0.00	29.05	5.06	6.05 (4.71)
Feedback (FB)	0.00	8.57	0.77	1.23 (1.53)
24 month ^b				
Time spent with book (minutes)	0.00	6.97	1.92	2.03 (1.48)
Read text from book (RT)	0.00	8.57	0.00	1.60 (2.40)
Simple elaboration (SE)	0.00	6.35	0.40	0.71 (1.10)
Complex elaboration (CE)	0.00	15.00	0.34	1.16 (2.10)
Provides label (PL)	0.00	20.00	2.52	3.83 (4.35)
Asks for/requests label (RL)	0.00	20.00	2.85	3.36 (3.82)

(table continues)

Strategy	Min	Max	Mdn	<i>M (SD)</i>
24 month ^b				
Requests a point (RP)	0.00	4.86	0.00	0.25 (0.83)
Requesting other (RO)	0.00	15.00	1.81	2.54 (2.70)
References (RF)	0.00	15.00	0.00	0.31 (1.70)
Comparisons (CP)	0.00	1.04	0.00	0.05 (0.16)
Points/taps picture (PP)	0.00	20.00	4.02	4.90 (4.19)
Feedback (FB)	0.00	15.00	2.61	3.21 (2.99)
36 month ^c				
Time spent with book (minutes)	0.00	5.05	1.98	1.97 (1.01)
Read text from book (RT)	0.00	8.37	2.70	2.96 (2.93)
Simple elaboration (SE)	0.00	2.05	0.00	0.17 (0.35)
Complex elaboration (CE)	0.00	18.57	0.88	1.57 (2.58)
Provides label (PL)	0.00	10.00	0.56	1.38 (1.98)
Asks for/requests label (RL)	0.00	23.00	2.03	2.89 (3.76)
Requests a point (RP)	0.00	1.48	0.00	0.04 (0.22)
Requesting other (RO)	0.00	24.00	1.11	2.01 (3.45)
References (RF)	0.00	1.40	0.00	0.19 (0.36)
Comparisons (CP)	0.00	0.50	0.00	0.02 (0.09)
Points/taps picture (PP)	0.00	21.00	3.87	4.04 (3.60)
Feedback (FB)	0.00	24.09	1.90	2.56 (3.44)

$N^a = 78$, $N^b = 81$, $N^c = 67$

Changes over time, from child age 14 months to 24 months to 36 months, were examined by a simple comparison of means. Statistical analysis of change was based on a repeated measures analysis of variance (ANOVA). Repeated or simple contrasts were used to analyze change for the various hypotheses. Repeated contrasts were conducted to test changes over time in questioning strategies. Simple contrasts were conducted with feedback, reading book text, elaborations, and labels to test the difference between strategies at 14 compared with 24 months and 14 months compared with 36 months.

It was hypothesized that fathers would be more likely to use feedback, reading book text, and elaborating during book reading sessions at 24 and 36 months compared with 14 months. On average, fathers used feedback more and reading book text more at 24 and 36 months than at 14 months. Statistical analyses revealed the use of feedback at 14 months was statistically significantly less frequent than feedback at 24 months and 36 months, $F(1, 38) = 15.00, p < .01$; $F(1, 38) = 12.64, p < .01$. Reading book text at 14 months was also statistically significantly less frequent than reading book text at 24 months and 36 months, $F(1, 38) = 10.80, p < .01$; $F(1, 38) = 27.71, p < .01$.

Elaborations revealed results contrary to the hypothesis. Simple elaborations increased from 14 to 24 months, but then decreased from 24 to 36 months, although only the simple elaboration change from 14 to 24 months was statistically significant, $F(1, 38) = 10.76, p < .01$. Complex elaborations were the highest at 14 months, but only the change in complex elaborations from 14 to 24 months was statistically significant, $F(1, 38) = 6.63, p < .05$.

Fathers were expected to provide more labels at 14 months than at 24 and 36 months. Labeling increased from 14 to 24 months and then decreased from 24 to 36

months, but only 14 to 24-month labeling approached statistical significance, $F(1, 38) = 3.56, p = .07$.

Various questioning techniques were expected to increase with child age.

Requesting labels increased from 14 to 24 months and decreased from 24 to 36 months, but only the change from 14 to 24 months was statistically significant, $F(1, 38) = 16.14, p < .01$. Requesting other information showed little change with age, and the change was not statistically significant.

Research Question 2

What book reading strategies by fathers with their children at 14, 24, and 36 months of age predict children's emergent literacy at pre-kindergarten? An exploration of conceptual similarity revealed the appropriateness of combining variables for this question to reduce the number of statistical analyses and clarify the results. It is appropriate to combine variables with distinct behaviors that are conceptually related, as in this study, so far as the correlations between variables and outcomes are in the expected direction with the outcomes they are anticipated to affect (Bollen & Lennox, 1991; Roggman, Fitzgerald, Bradley, & Raikes, 2002b).

Referencing and comparisons were combined because both referred to experiences in the child's life that related to the book. Therefore, these variables were combined as *associations*. Reading book text and complex elaborations were conceptually related. Reading book text included reading anything written in the book text. Complex elaborations were vocalizations expanding on concepts, print, or pictures in the book. These variables comprised complex language related to the book. Therefore,

these variables were combined as *reading/elaborating*. Providing labels and simple elaborations were conceptually related. These variables included simple language related to the book and therefore were combined as *providing information*. Requesting a label and requesting a point were conceptually related and combined as *questions*. Requesting other information was retained as an individual variable due to its definition. Requesting a label and requesting a point involved no open-ended answers from the child, while requesting other information required open-ended answers. Pointing remained an individual variable due to the pervasiveness of its correlation with other variables, its high frequency, and its independent definition (see Appendix D). Feedback and book reading time remained individual variables due to their independent definitions.

Fathers' self-report of the time they spent reading books with their child was unrelated to the observed book reading time at any age point, with correlations ranging from .01 ($p = .92$) at 36 months to .03 ($p = .81$) at 14 months. Self-report of book reading time only at 14 months was statistically significantly related to oral language and receptive language at pre-kindergarten, suggesting that fathers' actual choice of book reading time when other activities are available is a better indicator of time spent book reading, rather than what they say they do (see Table 4). Therefore, observed book reading time was used in all further analyses.

It was expected that father book reading strategies would predict emergent literacy skills at pre-kindergarten. It was also expected that mother education would be related to children's emergent literacy skills because some studies indicate mother's education level has even more impact than book reading on emergent literacy (e.g., Payne et al., 1994; Sénéchal et al., 1998) and is pervasively correlated with children's school

readiness more generally (Christian, Morrison, & Bryant, 1998). Table 4 shows the results from this analysis.

Oral language was correlated with book reading time at 14 months ($r = .30, p < .05$) and with reading/elaborating at 24 months ($r = .28, p < .05$). Phonological processing was correlated with 36-month reading/elaborating and book reading time ($r = .32, p < .05$; $r = .27, p < .05$) and showed an association that approached significance with providing information at 36 months ($r = -.22, p = .09$). Receptive vocabulary was correlated with 36-month reading/elaborating and book reading time ($r = .27, p < .05$; $r = .32, p < .05$). However, receptive vocabulary was negatively correlated with providing information at 24 and 36 months ($r = -.29, p < .05$; $r = -.59, p < .01$) and with requesting other information at 36 months ($r = -.33, p < .05$). Concepts of print was correlated with reading/elaborating at 14 months ($r = .32, p > .05$) and negatively correlated with providing information at 36 months ($r = -.35, p < .01$).

Regression analyses were then performed to explore the combined predictive value of correlated strategies on emergent literacy outcomes. Mother education was entered first in all analyses as a covariate because it was correlated with most of the emergent literacy outcomes. The father book reading strategies that were most associated with children's emergent literacy in the bivariate correlations were used as predictors in regression analyses. Each of the four emergent literacy constructs was tested as a dependent variable in a sequence of two regression models, first with only the demographic variable of mother education, and then with correlated father book reading strategies.

Table 4

Correlations Between 14-, 24-, and 36-Month Book Reading Strategies and Pre-kindergarten Emergent Literacy Outcomes

Strategy	Emergent literacy outcomes			
	Vocab ^c	Oral Lang ^a	Phonol ^c	Concept/Print ^b
Maternal education	.35**	.03	.35**	.28**
<u>14-month variables</u>				
Self-reported time	.24*	.26*	.15	.15
Book reading time	.03	.30*	.21	.02
Requesting Other	.16	-.17	.02	-.04
ProvInfo	.01	-.06	.11	.10
ReadElab	.18	-.04	-.02	.32*
Assoc	-.11	-.04	.07	-.09
Quest	.17	-.18	.19	.02
Feedback	.06	-.06	.05	.19
Pointing	.00	-.15	-.04	.24+
<u>24-month variables</u>				
Self-reported time	.05	-.04	.07	.08
Book reading time	-.07	.00	-.14	-.18
Requesting Other	-.01	-.12	.01	-.08
ProvInfo	-.29*	-.07	-.17	.10
ReadElab	.03	.28*	.17	-.15

(table continues)

	Vocab ^d	Oral Lang ^a	Phonol ^d	Concept/Print ^c
<u>24-month variables (cont.)</u>				
Assoc	-.23+	.07	-.15	-.19
Quest	.12	.00	.12	.13
Feedback	.07	.14	.19	.14
Pointing	-.02	.12	.12	.11
<u>36-month variables</u>				
Self-reported time	.20+	-.06	.15	-.01
Book reading time	.32*	.15	.27*	.19
Requesting Other	-.32*	-.19	-.10	-.19
ProvInfo	-.59**	-.05	-.24+	-.35**
ReadElab	.27*	-.08	.32*	.14
Assoc	.01	.05	-.08	-.06
Quest	-.18	.12	-.12	-.02
Feedback	-.24+	-.12	-.09	-.24+
Pointing	-.03	.20	-.03	.00

$n^a = 57$, $n^b = 58$, $n^c = 59$, $n^d = 60$, $n^e = 62$, $n^f = 67$, $n^g = 68$

+ $p < .10$, * $p < .05$, ** $p < .01$

Oral language was most strongly correlated with book reading time at 14 months and reading/elaborating at 24 months. Mother education was entered first in model 1 of the regression analysis. Book reading time at 14 months and reading/elaborating at 24 months were entered second. Results showed that the R^2 change from model 1 to model 2 was statistically significant, $F(2, 48) = 3.92$, $p < .05$. No individual variables entered in model 2 were statistically significant. However, the independent contribution of 14-

month book reading time approached statistical significance ($t = 1.87, p = .07$), indicating that more time spent reading the book at an early age predicted later oral language above and beyond maternal education.

Phonological processing was most strongly correlated with book reading time, providing information, and reading/elaborating at 36 months. Table 5 shows the results from this analysis. Mother education was entered in model 1 of the regression analysis. Book reading time, providing information, and reading/elaborating at 36 months were entered in model 2. The R^2 change from model 1 to model 2 was statistically significant, $F(3, 55) = 3.18, p < .05$. Mother education remained significant ($t = 2.32, p < .05$). However, model 2 accounted for 27% of the variance in receptive vocabulary, while model 1 only accounted for 12%. Of the three variables in model 2, only reading/

Table 5

Regression Analysis Predicting Phonological Processing (N = 60)

Variable	B	SE B	β	R^2	ΔR^2
Model 1				0.11	
Mother education	3.34	1.67	0.35**		
Model 2				0.20	0.13*
Mother education	2.63	1.14	0.28*		
Book reading time 36 month	0.06	0.05	0.17		
Reading and Elaborating 36 month	1.33	0.70	0.23+		
Providing Information 36 month	-1.72	1.26	-0.16		

+ $p < .10$, * $p < .05$, ** $p < .01$

elaborating at 36 months approached statistical significance ($t = 1.91, p = .06$), indicating recent reading/elaborating has the most effect on phonological processing.

Receptive vocabulary was most strongly correlated with associations and providing information at 24 months and with providing information, reading/elaborating, feedback, requesting other, and book reading time at 36 months. Mother education was entered in model 1 of the regression analysis. Table 6 shows results from this analysis. Associations and providing information at 24 months were entered in model 2 with 36-month providing information, reading/elaborating, feedback, requesting other, and book reading time. The R^2 change from model 1 to model 2 was statistically significant, $F(7,$

Table 6

Regression Analysis Predicting Receptive Vocabulary (N = 55)

Variable	B	SE B	β	R^2	ΔR^2
Model 1				0.11	
Mother education	2.34	0.86	0.35**		
Model 2				0.60	0.54**
Mother education	1.88	0.60	0.28**		
Associations 24 month	-1.84	0.86	-0.20*		
Providing Information 24 month	-0.46	0.37	-0.13		
Providing Information 36 month	-3.35	0.69	-0.45**		
Reading and Elaborating 36 month	-0.17	0.44	-0.04		
Feedback 36 month	-0.81	0.43	-0.18		
Requesting other information 36 month	-1.53	0.42	-0.33**		
Book reading time 36 month	0.06	0.03	0.22*		

* $p < .05$, ** $p < .01$

46) = 10.29, $p < .01$. Mother education in model 1 remained statistically significant ($t = 3.15$, $p < .01$). Associations at 24 months and 36-month providing information and requesting other accounted for statistically significant variance in receptive vocabulary, $t = -2.13$, $p < .05$; $t = -4.83$, $p < .01$; $t = -3.65$, $p < .01$. These variables were statistically significantly negatively associated with receptive vocabulary. Book reading time at 36 months was also statistically significantly associated with receptive vocabulary ($t = 2.27$, $p < .05$). Model 2 accounted for 60% of the variance in receptive vocabulary. These results indicate a critical time for associations to impact receptive vocabulary, while providing information and book reading have the most impact at the most recent age.

Concepts of print were most strongly correlated with reading/elaborating and pointing at 14 months and providing information and feedback at 36 months. Mother education was entered in model 1 of the regression analysis. Model 2 included 14-month reading/elaborating and pointing and 36-month providing information and feedback. The R^2 change from model 1 to model 2 was statistically significant ($F(4, 41) = 2.54$, $p < .05$). Results showed only 36-month providing information approached statistical significance as a predictor ($t = -1.70$, $p = .10$), indicating providing information at the most recent age impacts concepts of print. Model 2 accounted for 17% of the variance in concepts of print. Table 7 shows the results for this analysis.

Research Question 3

Is the effect of book reading on emergent literacy cumulative (best if high at all 3 ages), recent (most impact at most recent age), or early (best if at earliest age)? Results from question 2 indicated whether there was an early, critical, or recent time for certain

Table 7

Regression Analysis Predicting Concepts of Print (N = 47)

Variable	B	SE B	β	R^2	ΔR^2
Model 1				0.06	
Mother education	0.27	0.14	0.28+		
Model 2				0.17	0.18*
Mother education	0.22	0.13	0.22		
Pointing 14 month	0.06	0.10	0.11		
Reading and Elaborating 14 month	0.08	0.13	0.13		
Providing Information 36 month	-0.27	0.16	-0.24+		
Feedback 36 month	-0.14	0.09	-0.20		

+ $p < .10$, * $p < .05$

strategies to exert the most effect on emergent literacy outcomes. It was expected that father book reading strategies would exert the most influence on emergent literacy skills if book reading strategies were high at all three ages (cumulative). First, intercorrelations exploring the stability of strategies over time were conducted with the combined strategies. Few strategies were stable, or correlated, over time. Requesting other information was highly correlated between 14 and 36 months ($r = .68, p < .01$). Also, reading/elaborating between 14 and 36 months and between 24 and 36 months were correlated ($r = .31, p < .05$; $r = .51, p < .01$). Book reading time between 14 and 24 months and between 24 and 36 months approached statistical significance ($r = .24, p = .09$; $r = .26, p = .06$). Questions also approached statistical significance between 24 and 36 months ($r = .26, p = .06$). Correlations across the three age points for associations, pointing, feedback, and providing information were not statistically significant.

To conduct the analytical approach for the question about a cumulative effect, means were computed for strategies across ages for use as a cumulative effect. If there were data for at least two ages, a mean was computed. Mother education was entered in model 1 of the regression analysis. The computed mean over time was entered into model 2 for any strategies that predicted the outcome.

For oral language, cumulative book reading time and cumulative reading/elaborating were entered in model 2. Results from the cumulative regression for oral language showed no statistically significant R^2 change from model 1 to model 2, $F(2, 57) = 1.78, p = .18$, but cumulative book reading time approached statistical significance ($t = 1.87, p = .07$). Thus, average time spent with the book across ages was a potential predictor of oral language, though model 2 did not account for a statistically significant amount of variance in oral language.

For phonological processing, cumulative book reading time, cumulative providing information, and cumulative reading/elaborating were entered into model 2. The R^2 change from model 1 to model 2 for phonological processing was not statistically significant, $F(3, 60) = 2.11, p = .11$, but model 2 accounted for 16% of the variance in phonological processing. Mother education remained a statistically significant predictor of phonological processing in model 1 ($t = 2.78, p < .01$). Cumulative book reading time was a statistically significant predictor of phonological processing in model 2 ($t = 2.02, p < .05$).

For receptive vocabulary, cumulative book reading time, cumulative requesting other information, cumulative providing information, cumulative reading/elaborating, cumulative feedback, and cumulative associations were entered into model 2. The R^2

change from model 1 to model 2 for receptive vocabulary was statistically significant and accounted for 31% of the variance in receptive vocabulary, $F(6, 57) = 4.03, p < .01$.

Cumulative providing information and cumulative associations were statistically significant negative predictors of receptive vocabulary ($t = -3.27, p < .01$; $t = -3.07, p < .01$). Table 8 shows results for this analysis.

For concepts of print, cumulative feedback, cumulative pointing, cumulative providing information, and cumulative reading/elaborating were entered into model 2. Results from the cumulative regression for concepts of print showed no statistically significant R^2 change from model 1 to model 2, $F(4, 58) = 0.70, p = .60$. No variables in

Table 8

Regression Analysis Predicting Receptive Vocabulary Using Cumulative Strategies
($N = 65$)

Variable	B	SE B	β	R^2	ΔR^2
Model 1				0.11	
Mother education	2.34	0.79	0.35**		
Model 2				0.31	0.26**
Mother education	2.34	0.70	0.35**		
Cumulative providing information	-2.46	0.75	-0.38**		
Cumulative associations	-8.10	2.64	-0.33**		
Cumulative time in seconds	0.03	0.03	0.10		
Cumulative requesting other	0.66	0.88	0.08		
Cumulative reading/elaborating	-0.23	0.60	-0.04		
Cumulative feedback	-0.43	0.90	-0.05		

** $p < .01$

model 2 were significant predictors of concepts of print. However, mother education in model 1 remained a statistically significant predictor of concepts of print ($t = 2.15$, $p < .05$).

The results from this study show fathers strategies during parent-child book reading at 14, 24, and 36 months influence emergent literacy outcomes in pre-kindergarten children in a variety of ways. Oral language was predicted by 14-month book reading and cumulative book reading. Phonological processing was predicted by reading/elaborating at 36 months and cumulative book reading time. Receptive vocabulary was predicted by 36-month book reading time. Receptive vocabulary was negatively predicted by 24-month associations, 36-month providing information, and 36-month requesting other information. Also, cumulative associations and providing information negatively impacted receptive vocabulary. Concepts of print were negatively predicted by 36-month providing information.

CHAPTER V

DISCUSSION

This study examined how father behaviors while reading a book with their toddlers at ages 14, 24, and 36 months predicted their children's emergent literacy the spring of their pre-kindergarten year. This study expanded on previous literature by studying low-income father book reading strategies with very young children and the impact of these strategies on four emergent literacy outcomes. Vygotsky's theory of cognitive development was used to direct the research. Through scaffolding in the zone of proximal development, fathers provided opportunities during book reading to enhance children's emergent literacy skills.

Findings in Relation to Empirical Literature

Fathers in this study chose how much time to spend looking at a book with their child before moving on to other toys. They could spend hardly any time at all or the entire 10 minutes of the observation session. In general, fathers spent less of the observation time looking at the book as children grew older. Fifty-six to 60% of fathers reportedly read to their children (Scarborough et al., 1991), but there is a lack of research investigating variations among fathers in the amount of time they spend looking at books with their children or the book reading strategies they use. Research exploring mothers' book reading behaviors shows questioning, feedback, reading text, associations, pointing, labeling, and elaborations as strategies commonly used during book reading (Dickinson & Smith, 1994; Hockenberger et al., 1999; Sénéchal & Cornell, 1993; Sénéchal et al.,

1995a). Therefore, the possibility that fathers would also use these strategies was confirmed through the present study. Fathers practiced all hypothesized strategies during book reading. Requesting other information, feedback, pointing, labeling, and complex elaborations remained primary strategies at all ages (refer to Table 3 for frequencies). Requesting labels, requesting points, reading text, and associations were strategies employed in varying frequencies at different ages.

It was hypothesized that during the book reading sessions, fathers would provide feedback and read book text more at 24 and 36 months compared with 14 months, because children talk more at later ages, which would elicit more parental feedback, and because children also attend to text more at later ages (Martin, 1998). Similar to research with mothers and in accordance with the hypothesis, fathers used more feedback at 24 and 36 months compared with 14 months (Sénéchal et al., 1995a). Fathers also read the book text more at 24 and 36 months than at 14 months, though previous research has paid little attention to the trends of reading text and the books available at the older ages included more text to read.

It was also hypothesized that fathers would do more elaborating, both simple and complex, during book reading sessions at 24 and 36 months than at 14 months. In contrast to this hypothesis and one previous study (Martin, 1998), simple elaborations increased from 14 to 24 months. The previous study showing an increase in elaborations over time (ages 9 to 17 months) defined elaborating somewhat differently, including simple and complex elaborations in the same category. For the present study, simple and complex elaboration strategies were separated. Simple elaborations, defined as elaborating on the text by making sounds (e.g., woof), may have declined from 24 to 36

months due to the child's increasing knowledge of language related to the text, therefore reducing the need for simple elaborations by 36 months. Complex elaborations were used more frequently at 14 months than 24 months in this study, which was also contrary to the hypothesis and previous research. This may be due to the nature of the 14 month book. The picture book used at 14 months, *Good Dog Carl* (Day, 1992), contains very few words, only one sentence on the first page of the book and one on the last page. Books with fewer words lead to more parental language (Sénéchal et al., 1995a). Therefore, fathers may have needed to use more complex elaborations to convey the story to the child, whereas the 24 and 36 month book, *The Very Busy Spider* (Carle, 1984), contained an elaborate story.

Fathers were expected to provide more labels at 14 months than at later ages. However, labeling increased only from 14 to 24 months. Mothers' use of strategies depends on the child's cognitive development (Martin, 1998), which may also be true for fathers. As children became more interested in words, their fathers may have become more likely to provide labels. Again, the types of books used may have affected the results. The 24-month book contained opportunities for an abundance of labels that may have been new to the child (e.g., goat). Fathers may have provided labels to children dependant upon their knowledge of the child's familiarity with the vocabulary in the book, thereby increasing the use of labels at 24 months.

Questioning techniques were expected to increase with child age. Contrary to this hypothesis, requesting labels increased only from 14 to 24 months. Requesting other information increased slightly from 14 to 24 months before decreasing again from 24 to 36 months, which was not a significant change (Sénéchal et al., 1995a). Previous research

regarding questioning has shown an increase in questioning over time, although the research had been conducted with children only through age 27 months (Sénéchal et al.). Trends beyond 27 months may differ from younger children. Fathers in this study increased requesting labels through age 24 months, thus remaining consistent with previous literature. Future research should investigate the trends in father book reading strategies to confirm the results of this study.

The second research question explored how fathers' book reading strategies with their toddlers, at ages 14, 24, and 36 months, predicted the children's emergent literacy at pre-kindergarten. It was expected that book reading strategies would predict emergent literacy skills. Oral language has been the most common benefit from parent-child book reading documented in previous literature (Bus et al., 1995; Elley, 1989; Sénéchal et al., 1996; Valdez-Menchaca & Whitehurst, 1992). However, the present study found that although book reading time was correlated with oral language, none of the specific book reading strategies predicted oral language at pre-kindergarten. Nevertheless, book reading time at 14 months approached statistical significance in predicting oral language at pre-kindergarten. This may be due to the difference in ages from previous studies and the present study. This study focused on father-child book reading before the children were preschool-age, while previous research has focused mostly on concurrent book reading in post-preschool age children. The effects of specific book reading strategies on oral language may be a result of more recent book reading interactions.

Phonological processing was predicted by 36-month reading/elaborating, though it only approached statistical significance. This is consistent with literature indicating reading/elaborating has a positive impact on identifying letters and letter sounds

(Whitehurst et al., 1994a). These results suggest that reading the text and elaborating on illustrations and words during book reading, beyond simple labeling, may play a role in helping children develop letter identification and letter-sound knowledge.

Receptive vocabulary was predicted by 36-month book reading time, 24-month associations, 36-month providing information, and 36-month requesting other information. Extended time spent reading the book at 36 months predicted greater receptive vocabulary at pre-kindergarten, consistent with previous literature (Sénéchal et al., 1995b). Other aspects of book reading that may affect receptive vocabulary have not been examined in previous literature. Thus, this study is exclusive in its examination of the effect of other book reading strategies on receptive vocabulary. Providing associations at 24 months and providing information at 36 months were negative predictors of receptive vocabulary. Associations of illustrations or concepts in the book with children's own experiences have been assumed to be a positive strategy during book reading interactions (Hockenberger et al., 1999). However, the one study investigating associations during book reading focused on the effects of mothers' associations on child outcomes (Hockenberger et al.). The unusual direction of associations in this study may be due to a lesser amount of time fathers spend with children compared with mothers (Hochschild, 2003). Mothers may have more familiarity with their children's experiences to associate with the pictures and illustrations, which then promote effective assimilation. Future research should investigate the differences between mothers and fathers in relation to this phenomenon. Requesting other information was also in a direction inconsistent with previous literature (Sénéchal & Cornell, 1993; Sénéchal et al., 1995b). Sénéchal and Cornell posit that acquisition of receptive vocabulary is effective only when questioning

goes beyond what children already know. Fathers in this study may have been asking questions for which the children already knew the answer, thus not boosting receptive vocabulary through advanced questioning.

Children's knowledge about concepts of print was negatively predicted by 36-month providing information. This may be due to the need for more talk specifically about print to affect concepts of print, whereas providing information was a strategy generally associated with talk about pictures, rather than print, in the book. Other studies show that father-child book reading enhances children's understanding of concepts of print (Crain-Thoreson & Dale, 1992; Justice & Ezell, 2000; Whitehurst et al., 1994b). However, previous literature has not identified the specific behaviors during book reading through which concepts of print are developed. Pointing to the words provides a method for children to understand print directionality (i.e., top to bottom, left to right; McGee & Richgels, 2003). However, this study did not find pointing to be related to concepts of print.

The third research question investigated the early, recent, or cumulative impact of book reading strategies on emergent literacy skills. It was expected that father book reading strategies would exert the most influence on emergent literacy skills if book reading strategies were cumulative. In general, fathers used a different variety of strategies at different ages.

Exploring the predictive value of strategies over time revealed that 14-month and cumulative book reading time were the most significant predictors of oral language. Thus, time fathers spend reading books across ages positively affects oral language acquisition with the earliest age yielding the most benefits. This is consistent with

previous literature indicating that starting to read books to children at younger ages generates larger gains in oral language than reading onset at older ages (Bus et al., 1995; Lyytinen et al., 1998; Sénéchal & LeFevre, 2002).

Phonological processing has been studied in relation to time spent during book reading and to the general strategy of dialogic reading (Crain-Thoreson & Dale, 1992; Sénéchal et al., 1998; Whitehurst et al., 1994a). In accordance with previous literature, the results here also indicated cumulative time spent reading the book has an impact on phonological processing. However, reading/elaborating had the most impact on phonological processing at 36 months, indicating the importance of reading/elaborating at the most recent age.

Similar to phonological processing studies, research investigating the impact of book reading on receptive vocabulary generally has focused on "print exposure" (i.e., children's ability to recognize titles of children's books), time spent reading, or other measures of amount of book reading (see Crain-Thoreson & Dale, 1992; Cunningham & Stanovich, 1991; Sénéchal et al., 1996; Sénéchal & LeFevre, 2002). The results here are consistent with literature indicating cumulative time spent book reading is an important aspect of receptive vocabulary development. However, these results are also unique in the investigation of individual book reading strategies. The present study found associations and providing information over time had a negative impact on receptive vocabulary with a critical time for the most negative impact. Associations at 24 months and providing information at the most recent age, 36 months, had the most negative impact on receptive vocabulary.

Cumulative analysis revealed no strategies that were significant over time for concepts of print, which was inconsistent with the hypothesis. However, children's knowledge of concepts of print was negatively predicted by providing information at the most recent age. This study is unique in its examination of individual book reading strategies and the impact on concepts of print. However, these results are consistent with the trends of previous research. Existing literature has found that open-ended language during book reading is important for concepts of print (Crain-Thoreson & Dale, 1992; Justice & Ezell, 2000; Whitehurst et al., 1994b). To the extent that open-ended language includes some talk about print (Whitehurst et al.), this study is consistent with that research. Providing information is not open-ended language because it does not require a response from the child.

Limitations

There were several limitations evident in this study that require attention. First, this study had a small sample size that varied by analysis, with 47 being the smallest number included in any analysis. Small sample size reduces power, therefore decreasing the ability of the statistical tests to distinguish some relations among variables. This small sample may have masked possible effects of book reading that would have been evident with greater power in a larger sample.

Second, the location, income level, ethnicity, and gender of the sample reduce the degree these results may be generalized to other populations. This study was conducted with families in northern Utah, which limits generalizability to other regions. This study was conducted with low-income families and a large portion of the participants were

White. The trends of book reading strategies in low-income White families may be different from those in families at other income levels and among different ethnicities. Also, this study focused on the effects of book reading strategies used by fathers rather than by mothers, the focus of most previous research. Fathers may exert a different influence during book reading than mothers and read using different strategies. Therefore, these results may not generalize to mothers.

Third, preexisting differences in children may have contributed to the pattern of results regarding father book reading strategies and children's emergent literacy skills. For example, children who were more talkative may have elicited more talking from parents, thus there may have been bi-directional effects between parents' reading/ elaborating and questioning and children's oral language or vocabulary. Also, children with greater sustained attention may have elicited more time spent with the book and also may have gained a variety of experiences that contributed to their oral language, phonological processing, and receptive vocabulary.

Fourth, the oral language measure for this study was taken from observations of child mean length of turn (MLT) and mean length of utterance (MLU) during book reading. The child oral language measure was limited because children may have just listened to the story or spoke briefly about concepts related to the book. Thus, this observational measure may not have captured the full oral language ability of observed children.

Last, social desirability may have affected the outcomes of this study. Social desirability may be a more salient factor in parent report than parent-child observation (Sénéchal et al., 1996). This study found fathers' self-report of the time they spent reading

books with their child was less related than fathers' observed time spent reading to children's emergent literacy outcomes, suggesting that fathers' actual choice of book reading time has more internal validity than a self-report measure. Nevertheless, social desirability still presents a caution in interpreting the results of this observational study. Fathers knew they were being observed, and therefore, they may have altered their behavior to fit their expectations of what they should be doing during parent-child book reading.

Conclusion

Early childhood book reading experiences set the stage for developing necessary emergent literacy skills (Bus et al., 1995; Scarborough & Dobrich, 1994; Whitehurst & Lonigan, 1998). The results of this study suggest that fathers play an integral role in developing children's emergent literacy development through book reading. Time spent reading across ages remains an important part of father-child book reading, but certain book reading strategies are important as well. This study was not designed to investigate directly the precise age when strategies could have the most impact. However, there appear to be critical times, rather than cumulative effects, for certain strategies to promote optimal emergent literacy development. Cumulative time spent book reading was the only factor remaining important as children matured in oral language, phonological processing, and receptive vocabulary. Furthermore, time spent book reading at an early age was the most salient factor in oral language development. Reading/elaborating became more important as children matured, at least for phonological processing. Associations, providing information, and requesting other

information at more recent ages had a negative impact on receptive vocabulary and concepts of print, suggesting that these strategies interfered with other strategies with more positive contributions to children's emergent literacy.

These results indicate specific strategies parents use during book reading may need to be different depending on the child's age. Consistent trends in this study suggest that fathers should provide information at very young ages and move to questioning that goes beyond what the child already knows as they mature. Also, fathers should provide feedback at early ages (14 and 24 months) and focus on other strategies as children mature. Last, fathers should read and elaborate on the text, especially as children grow older.

In summary, the pre-school children in this study whose parents chose to spend more time looking at books with them when they were young toddlers had better emergent literacy skills. Parenting literature and early intervention programs therefore will do well to continue encouraging early book reading. The specific kinds of behaviors parents use during book reading, however, may need to be different depending on the age and developmental level of the child. Learning more about which book reading strategies are best at which ages is an important future research direction.

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APPENDICES

Appendix A
Informed Consent

DEPARTMENT OF FAMILY AND HUMAN DEVELOPMENT
College of Family Life Phone: (801) 797-1501
Logan, UT 84322-2905 Fax: (801) 797-3845

AGREEMENT TO PARTICIPATE IN EARLY HEAD START
RESEARCH AND EVALUATION

We want to know about your experiences with Early Head Start. The Administration on Children, Youth, and Families, within the U.S. Department of Health and Human Services has asked Mathematica Policy Research, Inc. and Utah State University to find out if Early Head Start provides services that young families need and helps them improve their lives. Over the next five years, Mathematica and Utah State University will be studying Early Head Start and looking at families' experiences before, during, and after being in the program.

By signing this AGREEMENT, you understand that:

1. Early Head Start is a research program. Everyone who applies to be in Early Head Start and is pregnant or has a child under 12 months old must agree to be part of the study and sign this form. *If you are eligible for Early Head Start, are pregnant or have a child under 12 months old, and have not received similar services in the last year, a lottery or chance drawing will decide whether or not you will be selected to enter Early Head Start.* Half of all eligible applicants will be selected to enter Early Head Start.
2. If you are *not* selected for Early Head Start, it means you have been selected for a separate group called a "comparison" group.
3. If you are picked by chance for the comparison group, you will not be allowed to enroll in Early Head Start until your child referred to in paragraph (1) becomes 36 months old. However, you may apply for any other services and enroll in any other programs in your community.

In addition:

4. A interviewer from Utah State University will ask to interview you approximately five times over the next five years about your family, the services you need, the services you have received, your child's health, your family's health, and if you are enrolled in Early Head Start, your experiences with program staff. Each interview will take between one and one-and-a-half hours. This is voluntary. You can choose not to answer particular questions. You can decide not to be interviewed at any time. However, your involvement in Early Head Start depends upon your involvement in the research; therefore, if you are selected for the program but withdraw from the research by

choosing not to be interviewed on two consecutive occasions, you will not be able to continue participating in Early Head Start. We anticipate that we will be able to offer you approximately \$20 in cash or cash-equivalent each time you complete an interview. Also, we will offer \$10 for additional interviews by telephone with your baby's father or grandparent.

5. An interviewer from Utah State University also may ask to visit you approximately six times over the next five years by appointment on or near your child's first three birthdays and when your child is 10, 18, and 30 months old. The interviewer will talk to you about your child and assess your child's development. The interviewer may ask to videotape you playing with your child. You will be asked to sign a separate consent form before you are videotaped. Each visit will last between two and two-and-a-half hours. This is voluntary. You can choose not to answer particular questions. You can decide not to receive a visit from an interviewer at any time. However, since Early Head Start is a research program, it is necessary to participate in the research in order to receive program services. If you are selected for the program but withdraw from the research by choosing not to be interviewed or visited on two consecutive occasions, you cannot continue participating in Early Head Start. We anticipate that we will be able to offer you approximately \$20 cash or cash-equivalent each time someone visits you. For the visits on or near your child's first three birthdays, these payments will be made immediately. For the other three visits, payment will be made in a lump sum when all visits have been completed.
6. If you are selected for Early Head Start, Utah State University may gather and use information about your child and family from the Early Head Start records.
7. Before each interview or visit, we will send you a letter saying that we plan to contact you for an interview or visit you to assess your child. The letter will show that we have official approval from the U.S. Office of Management and Budget or Utah State University's Institutional Review Board to contact you for the interview or visit you for the assessment.
8. All information gathered by Utah State University from interviewing and visiting you and from your records will be kept confidential and will be used only for research and program improvement. Your name will not be written on any questionnaire or observation form. You will not be identified in any report or presentation. The information will *not* be part of your Early Head Start program record. The information will *not* be given to the Department of Family Services, the Department of Health (including WIC), the Department of Mental Health, or any other agencies. Researchers must sign a confidentiality agreement before they can use the data. Except as may be

required by law, no information will be released to anyone who has not signed a confidentiality agreement.

9. If you have any question or concerns while participating in the study, you may call Dr. Lori Roggman at 801-797-1545 about your questions or concerns.

I have read (or have had read to me) and understand this AGREEMENT, and I freely agree to be part of the study. I have been given a copy of this AGREEMENT.

Applicant Name (printed)

Applicant Signature

Date

Signature of person administering the form

IF APPLICANT IS UNDER 18 YEARS OF AGE AND NOT AN EMANCIPATED MINOR:

Parent or Guardian Name (printed)

Parent or Guardian Signature

Date

EARLY HEAD START RESEARCH PARTNERSHIP
DEPARTMENT OF FAMILY AND HUMAN DEVELOPMENT
College of Family Life
2905 Old Main Hill
Logan, UT 84322-2905
Phone: (435) 797-0779 or Toll Free: (800) 915-9963
Fax: (435) 797-3845

Father's Videotaping Consent Form

My child and I are taking part in the Early Head Start research by Utah State University and Mathematica Policy Research, funded by the U. S. Department of Health and Human Services. This part of the study will help researchers learn how fathers and their children play, learn, and solve problems.

I understand that my child and I will be videotaped for about 30 minutes while we play, learn, and solve problems.

I understand that the activities filmed by videotape are confidential and will be used for research and educational purposes only. I understand that the videotape may be edited and that copies will be made for research and educational use. I also understand that while the images and voices (and possibly first names) of my child and me will be on the videotape, no identifying information such as full name or address will be recorded on the tape or box or released to any one except as may be required by law. The research staff who view the videotape will have signed an assurance of confidentiality that says that they agree with all these restrictions. I understand that the research based on these videotapes is likely to continue for several years, and the videotapes will not be destroyed.

I understand that my participation in this study is voluntary. I may stop participating in the videotaped activities at any time. I understand that the \$10 in cash and gifts I will receive for allowing the interviewer to interview me and assess my child represents full compensation for my participation.

I have had an opportunity to ask any questions I may have and have received a satisfactory explanation of any language or information I did not fully understand. I agree to participate and to permit the voices and images of me and my child to be videotaped. I have the authority to invite the interviewers to enter and remain on the premises in order to conduct the videotaping.

I have received a copy of this consent form. I understand that I can contact Dr. Lori Roggman at (801) 797-1545 or at (800) 915-9963 if I require any additional information about the study or have any questions.

Father's Name

Father's Signature

Date

Child's Name

Interviewer's Signature

Date

Appendix B
Demographic Questionnaire

SECTION 1: APPLICATION INFORMATION
APPLICANT DEMOGRAPHICS

Complete this section for the parent or other person (hereafter referred to as Applicant) with primary responsibility for care of applying child(ren). This section should also be completed if the applicant is a pregnant woman. This section provides demographic information about the applicant, including: race, language skills, education, and employment. Skip to question 1.8 if Preface has been completed for this applicant.

1.1 Applicant's name: _____
Last name
First name
MI

1.2 Date of birth: / / 1.3 Social security number: _____
MM DD YY

1.4 Gender: Male Female

1.5 Address:
 (Mark all that apply) _____
Street
Phone
 Living Here
 Mailing Address Town/City State Zip Code
 Pick-up Address

1.6 Other Address:
 (Mark all that apply) _____
Street
Phone
 Living Here
 Mailing Address Town/City State Zip Code
 Pick-up Address

1.7 Is there another adult who has major responsibility for the care of the applying children?

 No
 Yes → Who? _____
Last name
First name
MI

1.8 What race/ethnicity do you consider yourself to be? (Mark only one)

<u> </u> White (non-Hispanic) <u> </u> Black (non-Hispanic) <u> </u> American Indian: Tribal affiliation _____ <u> </u> Eskimo	Hispanic (specify): <u> </u> Mexican/Chicano <u> </u> Cuban <u> </u> Central American
-----------------------------------------------------------------------------------------------------------------------------------------------------	---------------------------------------------------------------------------------------------------------

☐ Aleut ☐ Puerto Rican
☐ Other, specify _____ ☐ Other: _____
☐ Biracial/multiracial
 Specify races: _____
Asian or Pacific Islander (specify):
☐ Chinese ☐ Guamanian
☐ Filipino ☐ Japanese
☐ Korean ☐ Asian Indian
☐ Samoan ☐ Hawaiian
☐ Vietnamese ☐ Other: _____

1.9 Do you speak a language other than English at home?

☐ No ☐ Yes, Spanish ☐ Yes, other: Specify _____

1.10 HSFIS INTERVIEWER: How well does the applicant speak English?

☐ Very well ☐ Well ☐ Not well ☐ Not at all

1.11 Have you previously been enrolled in Head Start or other childhood development program? Please specify which program(s) and date(s) of attendance.

☐ No
☐ Yes, Early Head Start from ____/____/____ to ____/____/____
☐ Yes, Parent and Child Center (PCC) from ____/____/____ to ____/____/____
☐ Yes, Comprehensive Child Development Program (CCDP) from ____/____/____ to ____/____/____
☐ Yes, Head Start Family Child Care Program from ____/____/____ to ____/____/____
☐ Yes, Head Start Migrant Program from ____/____/____ to ____/____/____
☐ Yes, Head Start Home-based / Home visit for 3-5 yr olds from ____/____/____ to ____/____/____
☐ Yes, Head Start Center-based for 3-5 yr olds from ____/____/____ to ____/____/____
☐ Yes, other: Specify _____ from ____/____/____ to ____/____/____

1.12 What is your marital status?

☐ Single ☐ Divorced
☐ Married ☐ Widowed
☐ Separated

1.13 What is the highest level of education you have completed? (Mark only one)

☐ No school completed ☐ High school graduate (high school diploma or equivalent, e.g., GED)
☐ Less than 4th grade ☐ Some college (but no degree)
☐ 5th-8th grade

- | | |
|--------------------------------------------------------------|------------------------------------------------------|
| <input type="checkbox"/> 9 th grade | <input type="checkbox"/> Associate degree in college |
| <input type="checkbox"/> 10 th grade | <input type="checkbox"/> Bachelor's degree |
| <input type="checkbox"/> 11 th grade | <input type="checkbox"/> Master's degree |
| <input type="checkbox"/> 12 th grade (no diploma) | <input type="checkbox"/> Doctorate degree |

1.14 What is your primary occupational status? (Mark only one)

- | | |
|----------------------------------------------------------------|---------------------------------------------------------------------------------------------|
| <input type="checkbox"/> Paying job | <input type="checkbox"/> Unemployed |
| <input type="checkbox"/> Full-time (more than 34 hours weekly) | <input type="checkbox"/> With past employment experience; time since last job: _____ months |
| <input type="checkbox"/> Part-time | <input type="checkbox"/> With no previous job experience |
| <input type="checkbox"/> Seasonal | |
|
<input type="checkbox"/> In school | |
| <input type="checkbox"/> Towards high school diploma/GED | |
| <input type="checkbox"/> Towards trade/business qualification | |
| <input type="checkbox"/> Towards college degree | |
| <input type="checkbox"/> Towards postgraduate degree | |
| <input type="checkbox"/> Other: Specify _____ | |
|
<input type="checkbox"/> Other | |
| <input type="checkbox"/> Homemaker | <input type="checkbox"/> In job training program |
| <input type="checkbox"/> Retired | <input type="checkbox"/> Training program with salary |
| <input type="checkbox"/> Unable to work due to disability | <input type="checkbox"/> Training program without salary |

1.15 Have you ever attended vocational training or a trade or business school?

- ☐ Yes ☐ No (skip to 1.17)

1.16 If Yes, did you receive a certificate or license?

- ☐ Yes ☐ No

1.17 Have you ever participated in a government training program?

- ☐ Yes ☐ No (skip to 1.19)

1.18 If Yes, what training program(s) have you attended?

- | | |
|------------------------------------|-----------------------------------------------|
| <input type="checkbox"/> JOBS | <input type="checkbox"/> JTPA |
| <input type="checkbox"/> Job Corps | <input type="checkbox"/> Other: Specify _____ |

Answer questions 1.19—1.24 only if applicant is age 19 years or younger. If not, continue with Section 2, question 2.1.

1.19 Are you currently an elementary, middle or high school student?

- ☐ Yes ☐ No (skip to 1.24)

1.20 *If Yes*, what level of school are you currently in?

☐ Elementary

☐ Middle or junior high

☐ High school

1.21 What is the name of your school? _____

1.22 Is there a teen parent program in your school?

☐ Yes ☐ No (skip to 2.1)

1.23 *If Yes*, are you enrolled in that program?

☐ Yes (skip to 2.1) ☐ No (skip to 2.1)

1.24 ***For female applicants only:*** *If No*, did you drop out of high school?

☐ No, completed high school

☐ Yes, before I became pregnant

☐ Yes, due to school policy related to pregnancy

☐ Yes, by my own choice, despite school policy that would allow me to remain in school

SECTION 4: APPLICATION INFORMATION
FAMILY COMPOSITION AND RESOURCES

Each family submitting an application should complete Section 4. Section 4 provides additional information related to the applying family including: family type, financial status and social supports. The box below provides a working definition of family which should be used for purposes of completing this section.

FAMILY: A family is composed of: (1) a pregnant woman or (2) 2 or more people who: (a) reside in the same household; and (b) are related either by blood, marriage, adoption, or commitment. A child's biological or adoptive parent or other focal adults who resides outside the household may also be included.

4.1 Please tell me which of the following descriptions best fits your family: *(Read list and check only one)*

- ☐ Two parent family (married or common law)
- ☐ Single parent family (mother figure only)
- ☐ Single parent family (mother figure only) living with partner
- ☐ Single parent family (father figure only)
- ☐ Single parent family (father figure only) living with partner
- ☐ Other relative(s)
- ☐ Foster family
- ☐ Other: Specify _____

4.2 How many adults are there in your family? _____ adults

4.3 How many children are there in your family? _____ children

4.4 What is your family's yearly gross income? \$ _____

4.5 What time period is this income based on? *(Mark only one)*

- ☐ Previous 12 months
- ☐ Last calendar year

4.6 How many adults contributed to this income? _____ adults

4.7 Many families receive services or financial assistance from one or more programs or agencies. Does your family receive any of the following types of services or financial assistance? *(Read list and mark all that apply)*

- ☐ Medical financial assistance (i.e. Medicaid/Medicare)
- ☐ AFDC
- ☐ Food Stamps
- ☐ WIC
- ☐ Supplemental Security Income (SSI)
- ☐ Foster care/Adoption subsidy
- ☐ Unemployment insurance
- ☐ Public housing assistance
- ☐ Energy program assistance
- ☐ EPSDT
- ☐ Child support/alimony
- ☐ Other: Specify _____
- ☐ None of the above

4.8 Has your family applied to receive Supplemental Security Income (SSI)?

☐ Yes ☐ No

Appendix C

Book Reading Coding Descriptions

Book Reading Scheme: EHS, revised 9/26/01

Cherri Holbrook, Adapted from: Storch, S. & Didow, S. (April, 1999). Contrasts between full-term and pre-term infants during picture book reading. Paper presented at the Biennial Meeting of the Society for Research in Child Development, Albuquerque, NM.

This coding scheme provides a sequential and descriptive analysis of book reading activities during the 3-bag task. Parents are instructed to play with their child using the toys in the bags, and to get through all 3 bags within 10 minutes.

1. Sequences of behavior are broken down into *cycles*. A *cycle* is defined as an interaction between parent and child with a book pertaining to a new picture. There can be gaps in the cycle sequence, if the cycle has an insufficient duration.

Cycles begin with: A verbalization and/or nonverbal behavior (such as point) by parent or child that referenced a new picture ON A NEW PAGE that lasts at least 3 seconds (cycles that are less than 3 seconds are left out of the sequence).

Cycles end when: Either parent or child turns the page, or can't see the pictures on the pages anymore (example pulling the book against their chest), or neither parent nor child is engaged with the book for more than 15 seconds (even if they are attending (AT), if there is no language or pointing for more than 15 seconds, the cycle ends) or when they move on to the next bag. If the parent or the child turns the page in mid-sentence, end the cycle time when the page is turned (as you normally would), but transcribe the entire sentence.

Begin and end times of cycles are noted from the time on the counter.

- II. Description of activities: All verbal and non-verbal behaviors during a cycle were coded using the following codes. The codes should be based on grammatical context of the language, not the pragmatics, tone of voice, or inflection. Each verbalization or behavior should be coded with only one code unless otherwise specified (ex. PF and PL), or unless a verbalization is paired with a behavior (ex. pointing) and they fit two distinct codes. Each behavior code is preceded with a code indicating who performed the behavior/verbalization.

M = mother F = father C = child

Requesting Information

Asks for/requests label (RL): asking other to name a picture (ex. "What's that?")

- Requests a point (RP):** asking the other about the location of a picture, or a question requiring the other to point to a picture (ex. "Where's the dog?" "Can you show me the..." "Which one is red?")
- Requesting other information (RO):** A question asking for information other than a point or label (ex. "What does a dog say?" "What color is that?" "Say bye bye.")
- Providing Information
- Provides the label (PL):** labeling a picture, whether asked to or not (ex. "That's a dog.")
- Read text from book (RT):** reading words from the book (ex. "I sail my boat.") If the parent reads a two or three sentence section of text, code it as one RT, not two.
- Context Recall (CR):** CHILD recalls book content (ex. This is the book about the dog), or recalls words as if they are reading the book (ex. M: The little egg lay on a C: leaf.)
- Simple Elaboration (SE):** elaborating on the text or other's verbalizations by making animal or other sounds (ex. "Woof woof." "Vroom.")
- Complex Elaboration (CE):** provides information pertaining to detail or function (ex. "The doll's dress is red." "The clock tells us the time.")
- Associations
- References (RF):** relating pictures to the experience of the child (ex. "you have a doll." "That's like your dog.")
- Comparisons (CP):** pointing out differences between the picture and the child's experience (ex. "Your dog is bigger." "You have a cat, not a dog.")
- Dramatizations (DR):** pretending related to the pictures (ex. Pretending to play the drum, drive a car (nonverbal)).
- Attention
- Direct Attention (DA):** a verbalization which directs the others attention (ex. "Look at that." "See.", or calling the child's name, "Beth") *This may be paired with a point, then count both.* ("Look at the dog" is considered directing attention while "Look at the little dog" is

a complex elaboration, and "The dog" is providing a label).

Points/taps/touches picture (PP): physically pointing towards or on the picture, tapping the picture. If parent guides child's hand to point, code PP for parent. If child or parent points in mid-sentence code the verbalization first and the point last.

Attending to the picture (AT): A response to another code, meaning that parent/child is: visually engaged with the picture or the others face or behaviors. *Code this only if no other responses are observed (ex pointing or verbalizing), otherwise another response assumes that the parent/child are attending.* if no response is recorded and AT is not recorded it is assumed that the person is *not* attending.

Feedback

Positive Feedback (PF): Feedback which reaffirms what the child said, acknowledges that it was correct (ex. "That's right!" "Yes, that's a car." , restating the label "Doggie."), nods head yes, verbalizations such as "Ah ha, mmmmm, OK, yep, uh huh, etc." If the parent adds to what the child said along with providing positive feedback code as PF and CE (ex. C: Dog. D: Yeah big dog. is coded as PF, CE).

Negative Feedback (NF): Feedback which corrects the child or discredits what the child said (ex. " No, that's not a car." Or shakes head no).

Other

Verbalization (VO): Intelligible (understandable) utterances which do not fit into the above categories (ex. counting).

Unintelligible Responses (UR): verbalizations and actions in response to the picture or others behavior or verbalizations *which are not understandable.*

Hierarchy for Activity Codes (1 being the priority, 4 being the lesser priority if a verbalization might be classified under 2 codes).

-PF/NF (1)

-CE (2)

-SE (3)

-PL, RT, DA, & AT (4)

- III. Language Transcription: All verbalizations are transcribed for each cycle, with a code indicating who verbalized. If parent or child is still talking when a cycle ends, transcribe to the end of the sentence. If there are overlapping verbalizations with parent or child, transcribe the first verbalization until appropriate breaking point then transcribe the overlapping verbalization.

M: Carl jumped on the C: Dog. M: bed.

Xxx = a placeholder in the text for utterances that are not audible.

Appendix D
Intercorrelations

Table D1

Intercorrelations of Father Book Reading Strategies at 14 Months

Strategy	1	2	3	4	5	6	7	8	9	10	11	12
1. Book reading time	--											
2. Request label	.04	--										
3. Request other	-.11	.12	--									
4. Request point	.06	.15	.11	--								
5. Provide label	-.03	.17	.08	.07	--							
6. Read text	-.15	-.17	-.19	-.05	.04	--						
7. Simple elaboration	.18	.04	-.01	-.07	.11	-.09	--					
8. Complex elaboration	.97	-.12	-.08	.00	.26*	.44**	-.07	--				
9. Referencing	.58	-.10	.15	.08	.28**	-.06	-.12	.00	--			
10. Comparisons	.01	-.05	-.07	-.04	-.06	.25*	-.08	.31**	.00	--		
11. Feedback	.11	.21+	.13	.29*	.09	-.20+	.08	.14	-.07	-.06	--	
12. Pointing	-.09	-.05	.06	-.05	.46**	.29**	.06	.73**	-.04	.27*	.24*	--

+ $p > .10$, * $p < .05$, ** $p < .01$

Table D2

Intercorrelations of Father Book Reading Strategies at 24 Months

Strategy	1	2	3	4	5	6	7	8	9	10	11	12
1. Book reading time	--											
2. Request label	-.14	--										
3. Request other	-.01	-.10	--									
4. Request point	-.02	-.19+	.04	--								
5. Provide label	-.28*	.32**	.06	-.03	--							
6. Read text	.12	-.26*	-.14	-.07	-.27*	--						
7. Simple elaboration	.18	-.01	.18	-.07	.18	-.12	--					
8. Complex elaboration	.05	-.13	-.06	-.04	-.21+	.12	-.09	--				
9. Referencing	-.10	-.09	.21**	-.05	-.12	-.08	-.05	-.01	--			
10. Comparisons	.06	.06	.13	-.08	.06	.07	.17	.07	.02	--		
11. Feedback	.15	.38**	.09	-.06	.09	-.14	.16	-.03	-.08	.24*	--	
12. Pointing	.00	.32**	.24*	-.14	.48**	-.14	.10	.10	-.11	.19+	.41**	--

+ $p > .10$, * $p < .05$, ** $p < .01$

Table D3

Intercorrelations of Father Book Reading Strategies at 36 Months

Strategy	1	2	3	4	5	6	7	8	9	10	11	12
1. Book reading time	--											
2. Request label	-.12	--										
3. Request other	-.12	-.07	--									
4. Request point	.03	.07	.02	--								
5. Provide label	-.08	.28*	.01	.08	--							
6. Read text	.33**	-.44**	-.30*	-.12	-.48**	--						
7. Simple elaboration	.13	.05	.07	.12	.27*	-.12	--					
8. Complex elaboration	.02	-.03	.05	-.06	.48**	.01	.07	--				
9. Referencing	.29*	.09	-.07	.04	.02	-.06	-.07	.06	--			
10. Comparisons	.09	.12	.04	-.04	.01	.06	.08	.09	.22+	--		
11. Feedback	.08	.64**	.06	-.01	.14	-.32**	.08	.00	.08	.11	--	
12. Pointing	.07	.28*	-.06	-.12	.35*	-.18	.10	.43**	.06	.09	.14	--

+ $p > .10$, * $p < .05$, ** $p < .01$